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No. _____

IN THE

Supreme Court of the United States

OCTOBER TERM 1980

MEMOREX CORPORATION, et al.,

Petitioners,

vs.

INTERNATIONAL BUSINESS MACHINES CORPORATION,

Respondent.

Appendix to Petition for Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

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MEMOREX CORPORATION, etc., et al.,
Plaintiffs-Appellants,
v.
INTERNATIONAL BUSINESS MACHINES CORPORATION,
Defendant-Appellee.
MEMOREX CORPORATION, etc., et al.,
Plaintiffs-Appellees,
v.
INTERNATIONAL BUSINESS MACHINES CORPORATION,
Defendant-Appellant.

Nos. 78-3050, 78-3236.

United States Court of Appeals, Ninth Circuit.

Argued and Submitted Sept. 10, 1980.

Decided Nov. 18, 1980.

Rehearing Denied in No. 78-3050 Feb. 5, 1981.

Ronald S. Beard, Gibson, Dunn & Crutcher, Los Angeles, Cal., argued for Memorex Corp., ILC Peripherals; Karl A. Limbach, Limbach, Limbach & Sutton, San Francisco, Cal., on brief.

Patrick Lynch, O'Melveny & Myers, Los Angeles, Cal., argued for International Business Machines Corp.; Edward B. Rogin, Orrick, Herrington, Rowley & Sutcliffe, San Francisco, Cal., James V. Selna, Los Angeles, Cal., on brief.

Appeal from the United States District Court for the Northern District of California; Samuel Conti, District Judge, Presiding.

Before DUNIWAY and GOODWIN, Circuit Judges, and KASHIWA,* Judge, United States Court of Claims.

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* The Honorable Shiro Kashiwa, sitting by designation.

PER CURIAM:

In this anti-trust case the trial judge, after a full trial lasting 80 days, granted a motion for a directed verdict. *ILC Peripherals Leasing Corp., et al. v. International Business Machines Corp.*, N.D. Cal., 1978, 458 F.Supp. 423. It had previously granted a motion for a directed verdict on one issue. *ILC Peripherals Leasing Corp. v. International Business Machines Corp.*, N.D. Cal., 1978, 448 F.Supp. 228. Plaintiffs appeal.

The case is one of several similar cases. One of these is *California Computer Products, Inc. v. International Business Machines Corp.*, 9 Cir., 1979, 613 F.2d 727. There we affirmed a judgment based upon the granting of a motion for a directed verdict in a case that presented substantially the same issues and much of the same evidence. We are unable to distinguish Memorex's case from the *California Computer Products* case, and we conclude that, on the authority of that case the judgment should be affirmed. *See also The Telex Corp. v. International Business Machines Corp.*, 10 Cir., 1975, 510 F.2d 894, reversing N.D. Okl., 1973, 367 F.Supp. 258; *In re IBM EDP Devices Antitrust Litigation, Transamerica Computer Co., Inc. v. International Business Machines Corp.*, N.D. Cal. 1979, 481 F.Supp. 965.

Our disposition of the case makes it unnecessary to decide whether it was error for the court to enter an order striking plaintiffs' demand for a jury trial in the event of a new trial. *See,* however, *In re Financial Securities Litigation, Fabrikant v. Bache and Co.*, 9 Cir., 1979, 609 F.2d 411.

Affirmed.

ILC PERIPHERALS LEASING CORPORATION,

Plaintiff,

v.

INTERNATIONAL BUSINESS MACHINES CORPORATION,

Defendant.

MEMOREX CORPORATION and MRX Sales and Service Corporation,

Plaintiffs,

v.

INTERNATIONAL BUSINESS MACHINES CORPORATION,

Defendant.

Nos. C-73-2238 SC and C-73-2239 SC.

United States District Court, N. D. California.

April 5, 1978.

Plaintiff brought antitrust action alleging that defendant's practice of selling disk drive unit and head/disk assembly for single price constituted illegal tying arrangement, and defendant moved for directed verdict. The District Court, Conti, J., held that where disk drive and head/disk assembly were designed to satisfy recognized customer need and were designed to be and would be used as one unit, where head/disk assembly was not customer removable, where integration of head/disk assembly into disk drive resulted in cost savings, and where practice in computer industry was to sell integrated disks and drives on which they operated for single price, head/disk assembly was component part of disk drive and assembly and disk drive constituted single product.

Motion for directed verdict granted.

1. Monopolies 17(2.5)

A "tying arrangement" involves seller's refusal to sell one product, the "tying product," unless buyer also purchases another, the "tied product." Sherman Anti-Trust Act, § 1, 15 U.S.C.A. § 1; Clayton Act, § 3, 15 U.S.C.A. § 14.

See publication Words and Phrases for other judicial constructions and definitions.

2. Monopolies 10

Antitrust laws were not designed to insure maintenance of status quo for any competitor.

3. Monopolies 17(2.5)

Where defendant's head/disk assembly and disk drive were designed to satisfy recognized customer need and were designed to be used as one unit, where head/disk assembly was not customer removable but could be removed by field engineer, where integration of head/disk assembly into disk drive resulted in cost savings, where head/disk assembly and disk drive were normally sold or used as unit with fixed proportions, and where practice in computer industry was to sell integrated disks and drives on which they operated for single price, head/disk assembly and disk drive were single product and defendant's practice of selling assembly and disk drive for single price did not violate federal antitrust laws. Sherman Anti-Trust Act, § 1, 15 U.S.C.A. § 1; Clayton Act, § 3, 15 U.S.C.A. § 14.

4. Monopolies 17(2.5)

For purpose of federal antitrust laws prohibiting tying arrangements, good intentions will not change two products into one and single product does not become separate and distinct products because of malevolent intent. Sherman Anti-Trust Act, § 1, 15 U.S.C.A. § 1; Clayton Act, § 3, 15 U.S.C.A. § 14.

John L. Endicott, Gibson, Dunn & Crutcher, Los Angeles, Cal., for plaintiffs.

O'Melveny & Myers, Patrick Lynch, Los Angeles, Cal., for defendant.

CONTI, District Judge.

This matter is before the court on IBM's motion for a directed verdict. F.R.Civ.P.50(a). In *Chisholm Brothers Farm Equipment Co. v. International Harvester Co.*, 498 F.2d 1137, 1140 (9th Cir.), *cert. denied*, 419 U.S. 1023, 95 S.Ct. 500, 42 L.Ed.2d 298 (1974), the Ninth Circuit said:

> When considering the propriety of the grant or denial of a motion for directed verdict, the correct standard is whether or not, viewing the evidence as a whole, there is substantial evidence present that could support a finding, by reasonable jurors, for the nonmoving party. "Substantial evidence is more than a mere scintilla." The evidence must be examined in a light most favorable to the nonmovant, and there can be no weighing of evidence. Finally, [the nonmoving party] is entitled to the benefit of all *reasonable* inferences that may be drawn from its evidence. [Citations omitted; emphasis in the original.]

With this standard in mind, the court will review the evidence that Memorex has presented. First, however, it is necessary to briefly discuss the substantive law that controls this case.

[1] Memorex has alleged that IBM's Madrid disk drive is an illegal tying arrangement. A tying arrangement involves a seller's refusal to sell one product (the tying product) unless the buyer also purchases another (the tied product). *Northern Pacific Railway Co. v. United States*, 356 U.S. 1, 5-6, 78 S.Ct. 514, 2 L.Ed.2d 545 (1958). Memorex claims that IBM's practice of selling the Madrid drive unit (the tying product) and the Madrid head/disk assembly (the tied product) for a single price violates Section 1 of the Sherman Act, 15 U.S.C. § 1, and Section 3 of the Clayton Act. 15 U.S.C. § 14.

In *Moore v. Jas. H. Matthews & Co.*, 550 F.2d 1207, 1212 (9th Cir. 1977), the Ninth Circuit said:

> Three criteria must be found to establish the illegality of a tying arrangement. First, there must in fact be a tying arrangement between two distinct products or services. Second, the defendant must have sufficient economic power in the tying market to impose significant restrictions in the tied product market. Third, the amount of commerce in the tied produce market must not be insubstantial. [Citations omitted.]

The court indicated that in theory, Section 1 of the Sherman Act requires that both the second and third criteria must be found to establish the illegality of a tying arrangement, while either is sufficient under Section 3 of the Clayton Act. However, the court recognized that the practical difference between these two statutory prohibitions has steadily eroded. We need not concern ourselves with this distinction because the only issue here is whether the Madrid disk drive is "two separate and distinct products . . . tied into a single package." *Id.* at 1214.

"[A]ntitrust decisions and literature contain astonishingly little discussion of the criteria to be applied to distinguish between component parts of a single product and a multiplicity of products." *N. W. Controls, Inc. v. Outboard Marine Corp.*, 333 F.Supp. 493, 501 (D.Del.1971). The Ninth Circuit has come as close as any court to setting out a workable standard in this area. In *Siegel v. Chicken Delight, Inc.*, 448 F.2d 43, 47 (9th Cir. 1971), *cert. denied*, 405 U.S. 955, 92 S.Ct. 1172, 31 L.Ed.2d 232 (1972), the Ninth Circuit said:

> Rules governing tying arrangements are designed to strike, in a not at the mere coupling of physically separable objects, but rather at the use of a dominant desired product to compel the purchase of a second, desired commodity.

The court supplemented this general statement with a specific standard which it indicated would be applicable in a case such as this:

> In determining whether an aggregation of separable items should be regarded as one or more items for tie-in purposes in the normal cases of sales of products the courts must look to the function of the aggregation. Consideration is given to such questions as whether the amalgamation of products resulted in cost savings apart from those reductions in sales expenses and the like normally attendant upon any tie-in, and whether the items are normally sold or used as a unit with fixed proportions.
>
> *Id.* at 48.

Thus, the court enumerated three "criteria to be applied to distinguish between component parts of a single product and a multiplicity of products." *N. W. Controls, Inc. v. Outboard Marine Corp., supra,* 333 F.Supp. at 501.

In *Moore v. Jas. H. Matthews & Co., supra,* the Ninth Circuit had the opportunity to apply this standard. In that case plaintiffs were in the retail grave memorial business and also operated an installation service for grave markers. They sued a number of cemeteries, alleging that it was illegal to tie the purchase of a cemetery lot with the requirements that purchasers of markers buy the memorial from or through the cemetery and use the cemetery's installation service. Reversing the District Court's judgment for defendants, the court said:

> In this circuit, we have looked carefully to the "function of the aggregation" in order to determine whether only a single product is sold. In *Siegel* we observed that, unless there are such considerations as legitimate cost savings or products used in a unit with fixed proportions, the tied product generally is regarded as "generically" distinct. [Citations omitted] 550 F.2d at 1215.

The court concluded that "consideration of the 'function of the aggregation' leads inescapably to the conclusion that separate products and services are involved in each of the tying arrangements before us." *Id.*

The court must, therefore, review Memorex's evidence with an eye to the "function of the [Madrid] aggregation." It must also consider whether integration of the head/disk assembly into the drive unit resulted in cost savings, and whether the head/disk assembly and the drive unit are normally sold or used as a unit with fixed proportions. However, before undertaking this evaluation, the court feels the need to recount some of the history leading up to the Madrid disk drive.

Storage of information is one of the vital functions of an electronic data processing system. In modern computers, this function is performed by devices peripheral to the central processing unit which are known either as tape drives or disk drives depending on the storage medium. For reasons which should become clear below, they are also described as serial access storage devices and direct access storage devices, respectively.

Tape drives were developed first and their operation is similar to conventional audio tape recorders. Information is recorded sequentially on the tape and may only be accessed in the same manner. Thus, the access time for data located at opposite ends of a reel of tape is relatively slow. Disk drives were developed in response to this shortcoming of serial access storage devices. The disks in a disk drive resemble a stack of phonograph records. Information is recorded randomly on the disks and may be accessed directly in much the same manner as the cuing mechanism on a stereo turntable makes it possible to set the needle down anywhere on a record. Access times for direct access storage devices are independent of the location of the data and are very fast.

The disk drive was invented by IBM in 1956. The first disk drive contained a number of large disks which could not be removed without destroying the information that was recorded on them. This device was a major breakthrough, but its limited storage capacity minimized its impact.

To accommodate the growing storage needs of users with the disk technology of the early 1960's, IBM introduced the customer-removable disk pack. A disk pack contains several smaller disks which can be removed from the drive unit and stored in a plastic case. By increasing the number of disk packs per drive, users are able to increase the effective storage capacity of their drives. Disk packs are completely interchangeable between compatible drive units, and since their introduction, storage capacity has increased from 7.5 megabytes per pack to 200 megabytes per pack.

IBM introduced another new concept with its Winchester disk drive. The disk pack was replaced by a more elaborate mechanism called a data module. The data module was still customer removable, but some of the equipment that had originally been part of the drive unit was combined with the disks and the whole arrangement was enclosed in a protective plastic shell. One of the parts moved into the data module was the heads so that the same heads that recorded information would read it. Thus, it was no longer necessary for the heads on all compatible drive units to be aligned periodically to the same tolerance. The larger of the two versions of the data module had a storage capacity of 70 megabytes. While this capacity is considerably smaller than the larger disk packs, it is not unusual for technological advances to be tested initially on a limited basis.

The Madrid disk drive followed after the Winchester. It did not have a customer-removable disk pack or data module. In their place was something called a head/disk assembly (HDA). The HDA can be changed by a trained field engineer, but to run the proper diagnostic tests takes approximately one hour. The HDA includes even more of the equipment that was originally part of the drive unit than the data module. The HDA contains a greater number of disks than the data module and is considerably heavier, but its storage capacity of 317.5 megabytes is significantly larger than anything that came before it.

With these preliminary matters out of the way, the court is now in a position to review Memorex's evidence on the Madrid claim in the light of both the directed verdict standard set forth in *Chisholm Brothers Farm Equipment Co. v. International Harvester Co., supra* and the tie-in standard set forth in *Siegel v. Chicken Delight, Inc., supra.*

Under the *Siegel* standard, the court must first look to the "function of the [Madrid] aggregation." As indicated above, the initial disk drive with its integrated disks had a very limited storage capacity. Customer-removable disk packs enabled users to increase the effective storage capacity of their disk drives, but with disk packs they lost the ability to keep all their data on line. As the storage capacity of disk packs increased, fewer packs were being used per drive so that a number of customers were paying for the removability feature and not taking advantage of it. The HDA is not customer removable. However, the Madrid "aggregation" offers users a significantly larger on-line storage capacity than has previously been available. It satisfied a recognized customer need, and regardless of how it is marketed, the HDA and the Madrid disk drive were designed to be and will be used as a unit.

The "function of the [Madrid] aggregation" is, therefore, to provide users with a very large storage capacity that is permanently on line. The fact it is possible for a field engineer to remove an HDA from one Madrid disk drive and install it in another without destroying the information that is recorded on it does not undermine this conclusion. Such a transfer would only be made in an emergency situation and goes to the maintenance and reliability of the "aggregation" not to its "function." It is also not important that users are able to upgrade their operations by having a fixed-head HDA installed. This change requires the assistance of a field engineer as well.

The second factor the court must consider is whether the integration of the HDA into the Madrid disk drive resulted in cost savings apart from those reductions in sales expenses and the like normally attendant upon any tie-in. The data module which was used on the Winchester disk drive had an automatic

loading mechanism so that all the user had to do was set the module in the drive, push a button, and wait a short time for a ready light to come on. This mechanism was not necessary on the HDA because the HDA is not customer removable. Elimination of these parts resulted in cost savings to IBM some of which were passed on to customers in the form of a lower cost per megabyte of storage.

The third factor the court must consider under the *Siegel* standard is whether the HDA and the Madrid disk drive are normally sold or used as a unit with fixed proportions. It is already clear that these two items were designed to be and normally will be used as a unit, and IBM concedes that they are always sold as a unit. This situation contrasts sharply with the customer-removable disk packs and data modules which were neither sold nor used as a unit with the disk drives on which they operated.

In addition, other equipment manufacturers who developed disk subassemblies that were not customer removable, including Memorex, sold the subassembly and the drive on which it operated as a unit for a single price. Whether industry practice is considered to be subsumed under the third factor above, *Siegel v. Chicken Delight, Inc., supra,* 448 F.2d at 48, n.4, or an independent factor, *N. W. Controls, Inc. v. Outboard Marine Corp., supra,* 333 F.Supp. at 501, it is clear that the practice in this industry is to sell integrated disks and the drives on which they operate for a single price.

Upon reviewing the evidence Memorex has presented in the light of the *Siegel* tie-in standard, the court concludes that the HDA and the Madrid drive unit are a single product, and that no reasonable jury could find otherwise. Indeed, Memorex itself has as much as conceded this fact in some of its product literature. In its *601 OEM Disk Storage Drive Introduction* it said:

> The recent announcement of the IBM 3344 and 3350 [Madrid] and System 32 indicates that IBM has recognized the advantages of and made a commitment to the fixed disc concept, using "Winchester" head and sealed

> environment technologies. This approach has increased the bit packing density and reduced the cost per Megabyte. Such a commitment by IBM indicates their confidence in this technology and certainly assures that it will be the accepted approach for the generation of systems to be designed and built during the next decade.
>
> The traditional disc drive equipment manufacturer must now integrate disc media technology into his products to meet this technological challenge. Within the industry today, few manufactureres have this capability.
>
> Memorex has long been the independent leader in supplying superior media and disc drive products for the OEM and end-user markets. [IBM Exhibit 12255 at 3]

Memorex undertook to develop the 601 or Maverick product prior to IBM's announcement of the Madrid program. However, it was obviously aware of the Madrid program when this brochure was written. On page 10 of the brochure, the Maverick disks are described as fixed (non-removable) and it is emphasized that because the disks are included in the price of the drive, there are no packs or cartridges to buy. Finally, on page 11, Memorex stresses that the sealed deck plate assembly makes for easy maintenance and allows for field upgradeability.

The Maverick product was sold to original equipment manufacturers. However, Memorex's Madrid-type product, which competes in the end-user market against IBM's Madrid, is also sold for a single price. Memorex indicated to customers that separate prices would be quoted if requested, but it would have been more consistent with its position in this case to have offered the disk subassembly and the disk drive at separate prices as a rule rather than as the exception.

[2] It appears to the court that what Memorex is really attempting to do here is to hold the line against progress in disk storage technology. The limited storage capacity of the first disk drive was responsible for the growth of separate markets for customer-removable disk products and drive units, but there was no guarantee that these dual markets would not merge again as storage capacities increased. If IBM had simply bolted

a disk pack or data module into a drive and sold the two items as a unit for a single price, the "aggregation" would clearly have been an illegal tying arrangement. Instead, IBM introduced a new product with the largest permanent on-line storage capacity ever offered. Just as buggy whip manufacturers had to face the fact that the invention of the automobile meant the end of their market as they had known it, this new disk storage technology will have a serious impact on the market for customer-removable disk products. However, the antitrust laws were not designed to insure the maintenance of the status quo for any competitor.

[3] The court concludes that the HDA is a component part in the Madrid disk drive. While it would be possible for IBM to sell the HDA for a separate price from the rest of the drive unit, just as it would be possible to sell many of the other components separately, IBM is not required to do so by Section 1 of the Sherman Act or Section 3 of the Clayton Act.

After reviewing Memorex's evidence, the court is convinced that the Madrid disk drive is a single product and that no reasonable jury could come to any other conclusion. The evidence shows that the Madrid head/disk assembly was not customer removable. As a consequence, IBM was able to use new technology to dramatically increase the storage capacity of disk storage devices. Integration of the disks into the drive resulted in lower manufacturing costs and lower costs per megabyte of storage to users. Customers wanted a large permanent on-line storage capacity, and there was a practice in the industry to offer such devices as a unit for a single price.

[4] Because the court has concluded that the Madrid disk drive is a single product, IBM's intent is irrelevant. Good intentions will not change two products into one, and likewise, a single product does not become separate and distinct products because of a malevolent intent. For the reasons indicated above, the court hereby grants IBM's motion for a directed verdict on the tie-in aspect of Memorex's Madrid claim.

ILC PERIPHERALS LEASING CORPORATION, Plaintiff,

v.

INTERNATIONAL BUSINESS MACHINES CORPORATION, Defendant.

MEMOREX CORPORATION, MRX Sales and Service Corporation, Plaintiffs,

v.

INTERNATIONAL BUSINESS MACHINES CORPORATION, Defendant.

Nos. C-73-2238 SC, C73-2239 SC.

United States District Court, N. D. California.

Aug. 11, 1978.

Action was brought for monopolization or attempted monopolization of various markets in the computer industry. After declaration of mistrial following jury deadlock, defendant moved for directed verdict. The District Court, Conti, J., held that: (1) plaintiff's evidence was insufficient to establish relevant product market; (2) assuming validity of market definitions, plaintiff failed to satisfy its burden or proving defendant's monopoly power in those markets; (3) plaintiff failed to prove claim of predatory pricing; (4) plaintiff's evidence was too speculative to establish amount of damages; (5) plaintiff failed to prove that various acts of defendant, including certain interface and pricing changes, were anticompetitive, predatory, or unnecessarily exclusive of competition, and (6) in the event of remand for retrial, plaintiff's jury demand would be stricken since the magnitude and complexity of the suit rendered it, as a whole, beyond the ability and competency of any jury to understand and decide rationally.

Motion for directed verdict granted; jury demand stricken.

1. Monopolies 12(1.3)

One element of the offense of monopolization is the possession of monopoly power in a relevant market or submarket.

2. Monopolies 12(1.3)

The two important factors to consider in defining the relevant product market in connection with alleged monopolization are substitutability in use and substitutability in production of commodities.

3. Monopolies 12(1.3)

Primary concern in defining submarket in connection with alleged monopolization is whether domination of the product market or markets defined by plaintiff would enable defendant to control prices and exclude competition.

4. Monopolies 28(7.4)

In antitrust suit, plaintiff failed to satisfy its burden of proving that the general purpose computer systems market was a relevant market or submarket, both because it excluded reasonable alternative products and services and because the accuracy of the underlying market information was questionable.

5. Monopolies 28(7.4)

In antitrust action against computer systems manufacturer, plaintiff failed to satisfy its burden of proving that three of defendant's plug compatible markets were relevant markets or submarkets, because they excluded reasonable alternative products in light of competition from alternative storage media, competition from manufacturers of comparable products not plug compatible with defendant's products, and importance of prices for peripheral products, and because, in one instance, there was insufficient evidence to show that the alleged market

existed because of marketing of units as a subsystem. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

6. Monopolies 12(1.3)

Monopoly power is defined as the power to control prices or exclude competition, and market share does not alone determine the presence or absence of monopoly power.

7. Monopolies 12(1.3)

To determine a firm's monopoly power as of a given date, its current market share is the relevant figure and is normally measured in terms of current output, and market share was not sufficiently shown by figures which lump past manufactures with present, including products over which defendant no longer had any pricing discretion.

8. Monopolies 28(7.4)

Plaintiff in antitrust suit failed to satisfy its burden of proving that defendant possessed monopoly power in the markets it defined.

9. Monopolies 17(1.7)

Tests for predatory pricing are pricing below marginal or average variable costs and pricing above such costs but below short run profit-maximizing price where barriers to entry are high; the second test should be appied only in limited circumstances and should probably be considered an exception to the first test rather than an independent test itself, and the tests are the same even if evidence of price discrimination or price balancing is offered.

10. Monopolies 17(1.8)

Company should not be guilty of predatory pricing, regardless of its costs, when it reduces prices to meet lower prices already being charged by by its competitors.

11. Monopolies 28(7.4)

Evidence in antitrust suit was insufficient to support finding that prices for any of defendant's products were predatory, under test relied on by plaintiff of showing barriers to entry and prices below short run profit-maximizing price.

12. Monopolies 28(7.6)

Plaintiff's damage evidence was insufficient in antitrust suit in that verdict rendered thereon would be result of speculation and guesswork because there was no basis in record for jury to determine what effect on damages would be if it found one or more of the challenged acts lawful, and, because plaintiff failed to explain away the effect of any of the factors other than defendant's allegedly illegal conduct that had an adverse effect on plaintiff's operations during the relevant time period, including management problems, general recession and competition from third parties.

13. Monopolies 28(9)

In calculation of damages caused by alleged monopolization, condition of the overall economy is an important factor.

14. Monopolies 28(7.6)

Injured plaintiff in antitrust suit need not show the amount of damages with precision, but must provide the jury with a theory of recovery that is both reasonable and the best measure available.

15. Monopolies 17(1.3)

Computer systems manufacturer's policy of not disclosing interface information until the first customer shipment of its products did not constitute act of monopolization as claimed by plug compatible manufacturer.

16. Monopolies 28(7.4)

Plaintiff plug compatible manufacturer failed to present sufficient evidence in antitrust suit that defendant computer systems manufacturer's introduction of longer-term leasing plan constituted act of monopolization, in absence of evidence that the overall profitability of the program depended on later price increases to recoup present losses, and where the lease terms, which were shorter than those offered by competitors, were not so long as to have any significant lock-out effect.

17. Monopolies 28(8)

Where there is difference of opinion in antitrust suit as to the advantages of two alternatives which can both be defended from an engineering standpoint, court will not allow itself to be enmeshed in a technical inquiry into the justifiability of product innovations.

18. Monopolies 28(7.4)

Evidence in monopolization suit established that various products and series of products introduced by defendant computer systems manufacturer were genuine innovations and did not constitute monopolization in connection with interface changes and pricing as contended by plaintiff plug compatible manufacturer, considering, among things, absence of evidence that defendant was sacrificing present profits with the expectation of recouping its losses with subsequent price increases.

19. Monopolies 17(1.8)

Proper focus with respect to predatory pricing claim was whether defendant's overall program was projected to be profitable.

20. Monopolies 17(1.7)

Even assuming that item is a separate product, the antitrust laws do not require separate pricing when no competitive alternative is available.

21. Monopolies 17(1.3)

Where all acts of defendant computer systems manufacturer challenged by plaintiff plug compatible manufacturer were reasonable responses to competition in that plaintiff and others were making serious inroads into defendant's business through reverse engineering and in that defendant met this competition by introducing a new generation of computers and by developing more advanced peripheral products that were able to take advantage of the latest technology and were offered to customers at lower prices, thus benefiting users, such conduct by defendant was of type which the antitrust laws were meant to encourage and were not anticompetitive, predatory, or unnecessarily exclusive of competition; antitrust laws could not be used to make time stand still and preserve plaintiff's profitable position.

22. Federal Civil Procedure 2061

In the event of retrial in antitrust case, plaintiff's jury demand would be stricken even though jury is ordinarily appropriate in antitrust damage action, where the magnitude and complexity of the suit was such as to render it, as a whole, beyond the ability and competency of any jury to understand and decide rationally, as indicated by five-month trial which had already taken place and resulted in deadlock, and in light of fact that length of any trial in the case would be such as to render it questionable whether jury would be a true cross section of the community, and considering possibility that if retrial was also by jury, no decision would be made. U.S.C.A.Const. Amend. 7.

23. Jury 13(1)

Where issues in a case are beyond the practical abilities and limitations of a jury, legal remedy is inadequate and equity jurisdiction will attach, so that jury is not required. U.S.C.A.Const. Amend. 7.

24. Federal Civil Procedure 2061

Where there had already been a five-month trial in antitrust case resulting in a jury deadlock and jury expenses amounting to more than $32,000, and where the case was technically and financially complex, right to jury trial should be limited to one jury trial. U.S.C.A.Const. Amend. 7.

John L. Endicott, Gibson, Dunn & Crutcher, Los Angeles, Cal., for plaintiffs.

Patrick Lynch, O'Melveny & Myers, Los Angeles, Cal., for defendant.

ORDER

CONTI, District Judge.

The jury in the trial of this action was asked to decide whether IBM monopolized or attempted to monopolize various markets in the computer industry. After five months of trial, and after the jury reported itself deadlocked, the court declared a mistrial.

IBM has moved this court for a directed verdict on the grounds that no reasonable jury could find for Memorex on any of its contentions. The court now entertains this motion.

The court, in ruling on IBM's motion for a directed verdict, will discuss the issues and evidence and analyze the same by dividing them into four categories. These are:

(I) MARKETS AND MONOPOLY POWER;
(II) PRICING;
(III) DAMAGES;
(IV) ACTS:

(1) Interface disclosure;
(2) The Fixed Term Plan;
(3) 2319A and 2319B disk drives;

(4) The New Attachment Strategy;
(5) 3705 Communications Control Units;
(6) System/370 Models 112 and 125.

I. MARKETS AND MONOPOLY POWER:

[1] One element of the offense of monopolization is the possession of monopoly power in a relevant market or submarket. *United States v. Grinnell,* 384 U.S. 563, 570-71, 86 S.Ct. 1698, 16 L.Ed.2d 778 (1966). By agreement of the parties in this case, an element of the offense of attempt to monopolize is the specific intent to possess monopoly power in a relevant market or submarket. Memorex offered evidence to establish the following markets; (1) general purpose computer systems; (2) IBM plug compatible disk drives; (3) IBM plug compatible disk drive control units; and (4) IBM plug compatible communications control units. IBM contends that Memorex has failed to satisfy its burden of proving that any of these markets is a relevant market or submarket as those terms are defined by the antitrust laws.[1]

[2] In *Twin City Sportservice, Inc. v. Charles O. Finley & Co.,* 512F.2d 1264 (9th Cir. 1975), the Ninth Circuit discussed relevant market at length. An excerpt from this opinion follows:

> The proper point of departure in any discussion of the relevant product market must be the rule of "reasonable interchangeability," enunciated in *United States v. E. I. du Pont de Nemours & Co.,* 351 U.S. 377, 395, 76 S.Ct. 994, 100 L.Ed. 1264 . . . (1956). According to the Court,
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> > In considering what is the relevant market for determining the control of price and competition, no more definite rule can be declared than that com-

[1] The parties agreed that the relevant geographic market is the United States. Their disagreement was over the definition of the relevant product market.

> modities reasonably interchangeable by consumers for the same purposes make up that "part of trade or commerce", monopolization of which may be illegal.
>
> That is, where there is a high degree of *substitutability in the use* of two commodities, it may be said that the cross-elasticity of demand between them is relatively high, and therefore the two should be considered in the same market. A like analysis applies when the market is viewed from the production rather than the consumption standpoint; the degree of substitutability in production is measured by cross-elasticity of supply. Substitutability in production refers to the ability of firms in a given line of commerce to turn their productive facilities toward the production of commodities in another line because of similarities in technology between them. Where the degree of substitutability in production is high, cross-elasticities of supply will also be high, and again the two commodities in question should be treated as part of the same market. While the majority of the decided cases in which the rule of reasonable interchangeability is employed deal with the "use" side of the market, the courts have not been unaware of the importance of substitutability on the "production" side as well. *Brown Shoe Co. v. United States,* 370 U.S. 294, 325 n. 42 [82 S.Ct. 1502, 8 L.Ed.2d 510] . . . (1962); *United States v. Columbia Steel Co.,* 334 U.S. 495, 510-11 [68 S.Ct. 1107, 92 L.Ed. 1533] . . . (1948). [Emphasis by the court.]

See also, Greyhound Computer Corp., Inc. v. International Business Machines Co., 559 F.2d 488, 493 n. 4 (9th Cir. 1977), *cert. denied,* 434 U.S. 1040, 98 S.Ct. 782, 54 L.Ed.2d 790 (1978). The two important factors to consider in defining the relevant product market are, therefore, substitutability in the use and substitutability in production of commodities.

[3] In *United States v. Grinnell Corp., supra,* 384 U.S. at 572, 86 S.Ct. at 1704, the Supreme Court indicated that "[i]n § 2 cases under the Sherman Act, as in § 7 cases under the

Clayton Act (*Brown Shoe Co. v. United States,* 370 U.S. 294, 325 [82 S.Ct. 1502, 8 L.Ed.2d 510] . . .) there may be submarkets that are separate economic entities." In *Brown Shoe Co. of United States,* 370 U.S. 294, 325, 82 S.Ct. 1502, 1523, 8 L.Ed.2d 510 (1962), the Supreme Court discussed submarkets:

> The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it. However, within this broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. *United States v. E. I. du Pont de Nemours & Co.,* 353 U.S. 586, 593-595, 77 S.Ct. 872, 1 L.Ed.2d 1057 . . . The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.

The submarket issue was cast by the Ninth Circuit in *Greyhound Computer Corp., Inc. v. International Business Machines Co., supra,* 559 F.2d at 493, in the following terms:

> The question is whether [plaintiff] offered evidence from which the jury could have reasonably concluded that the submarkets which [plaintiff] defined were sufficiently distinct in commercial reality to permit a company that dominated these submarkets to exclude competition and control prices.

Thus, the primary concern in the submarket context is still whether domination of the product market or markets defined by the plaintiff would enable the defendant to control prices and exclude competition. This inquiry boils down to whether there are products that restrain a defendant's ability to act without regard for other manufacturers and suppliers.

[4] The first market defined by Memorex is the general purpose computer systems market. IBM contends that this market is too narrow because it excludes products as minicomputers and programmable communications control units and terminals, and because it excludes competitors such as software suppliers, leasing companies, and service organizations. IBM further contends that the reason this market is too narrow is that Memorex's market experts relied on an inaccurate source of market information.

IBM offered evidence that a reasonable alternative to a central processing unit is a series of minicomputers. As minicomputers have improved, a number of large companies and organizations have adopted this alternative. Minicomputers can also be used to supplement a central processing unit. In addition, where a user's computing needs are not all at one location, programmable communications control units and terminals can link and supplement a series of minicomputers or a central processing unit. Leasing companies, which purchase computer equipment from manufacturers and lease it to users, are an alternative source of all kinds of computer equipment for all kinds of users. Finally, service bureaus that sell computer time or specific functions such as payroll offer another non-manufacturer option. Exclusion of these alternative products and services weighs against Memorex's general purpose computer systems market.

The evidence indicates that Memorex's market expert's primary source of information for this market was IBM's COMSTAT categories. COMSTAT was an internal IBM reporting procedure designed to assist in product development and marketing, not to measure competition. The usefulness of this data was questioned by IBM even before this litigation started, and also by a staff member of Memorex's market expert. Other sources of information were available, and while they were used to make adjustments in the COMSTAT data, the use of the COMSTAT categories colors the accuracy of this market definition. The court concludes that Memorex has not

satisfied its burden of proving that the general purpose computer systems market is a relevant market or submarket both because it excludes reasonable alternative products and services and because the accuracy of the underlying market information is questionable.

[5] Memorex also defined three IBM plug compatible product markets. The parties' agreed definition of a plug compatible product is "a device which can be used in place of another device without substantial electronic, mechanical or programming modifications and without significant change in the operation of the computer system." What this means in this case is that a Memorex disk drive, disk drive control unit, or communications control unit can replace that comparable IBM product in a system using an IBM central processing unit. IBM contends that these plug compatible markets are too narrow because they exclude other storage devices such as tape drives and main memory, because they exclude comparable products manufactured for use on non-IBM systems, and because they exclude systems of other systems manufacturers.

These three plug compatible markets include only disk drives, disk drive control units, and communications control units manufactured by IBM and replacements for these products manufactured by Memorex and others. Before examining these product markets more closely, some general comments are in order. In *United States v. E. I. du Pont de Nemours & Co., supra,* the Government attempted to limit the market to a single product, cellophane, which was manufactured by du Pont and one other company that was a licensee of du Pont patents. In affirming the district court's rejection of this market, the Supreme Court said:

> [O]ne can theorize that we have monopolistic competition in every nonstandardized commodity with each manufacturer having power over the price and production of his own product. However, this power that, let us say, automobile or soft-drink manufacturers have over their

> trademarked products is not the power that makes an illegal monopoly. Illegal power must be appraised in terms of the competitive market for the product. 351 U.S. at 393, 76 S.Ct. at 1006.

The Court continued later in its decision:

> [W]here there are market alternatives that buyers may readily use for their purposes, illegal monopoly does not exist merely because the product said to be monopolized differs from others. If it were not so, only physically identical products would be part of the market. To accept the Government's argument, we would have to conclude that the manufacturers of plain as well as moistureproof cellophane were monopolists, and so with films such as Pliofilm, foil, glassine, polyethylene, and Saran, for each of these wrapping materials is distinguishable. These were all exhibits in the case. New wrappings appear, generally similar to cellophane, is each a monopoly? What is called for is an appraisal of the "cross-elasticity" of demand in the trade.
>
> *Id.* at 394, 76 S.Ct. at 1006.

The same problem the Supreme Court found with the cellophane market exists in this case because there are or could be comparable plug compatible markets for the other systems manufacturers. A market definition that would inevitably lead to so many monopolies should be carefully scrutinized.

After considering the evidence, the court concludes that Memorex has not satisfied its burden of proving that the three IBM plug compatible markets are relevant markets or submarkets because they exclude reasonable alternative products. The court finds that Memorex improperly disregarded the existence of competition from alternative storage media. While there may be situations where disk storage is the only practicable medium, there are many other situations where either tape or memory are reasonable alternatives. The decision is

influenced by the price/performance ratios of the available options. Thus, these other storage media restrain the price IBM can charge for disk drives and disk drive control units.

The second retraint on IBM's disk drives, disk drive control units, and also on communications control units is potential competition from manufacturers of comparable non-IBM plug compatible products. These include plug compatible manufacturers who market their products to end users of non-IMB systems, original equipment manufacturers who market their products to other systems manufacturers for inclusion in their systems, and other systems manufacturers themselves. Memorex contended that the cost of modifying an interface precluded competition between IBM compatible and non-IBM compatible products. However, IBM demonstrated that the conversion cost was within the means of even small manufacturers and that the engineering difficulties were manageable. It also offered evidence of interface modifications that had been made at its request and by others.

Finally, the IBM plug compatible product markets ignore the importance of prices for peripheral products in the choice of a system. Peripheral products are devices, including disk drives, disk drive control units, and communications control units, that are outside the central processing unit. These devices have become an increasingly large part of the cost of a system. The higher their prices, the greater the cost of a system, and the less competitive the system is with the systems of other manufacturers. Competition between systems is, therefore, an important restraint on IBM's prices for disk drives, disk drive control units, and communications control units.

There are additional difficulties with the IBM plug compatible disk drive control unit and communitcations control unit markets. Disk drives and disk drive control units have been marketed as a subsystem by plug compatible manufacturers, including Memorex. In such circumstances, it is doubtful whether a separate market for disk drive control units even

exists. With respect to the communications control unit market, there is insufficient evidence to show that such a market exists. Memorex's market expert specifically excluded this market from his testimony, and the few documents offered in support of this market were inconclusive.

For the reasons indicated above, the court concludes that viewing the evidence as a whole, there is not substantial evidence present that could support a finding by reasonable jurors that Memorex has satisfied its burden of proving that the markets it defined are relevant markets or submarkets for antitrust purposes. As the Ninth Circuit said in evaluating monopolization claims under Section 7 of the Clayton Act and Section 2 of the Sherman Act, "Plaintiffs' contentions must fail because of their failure adequately to define and prove the relevant market which is 'a necessary predicate' for evaluating claims under these provisions of the antitrust laws." *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296 at 1301 (9th Cir. 1978). It is hereby ordered that IBM's motion for a directed verdict on this ground is granted.[2]

[6] IBM further argues that even assuming the validity of these market definitions, Memorex has failed to satisfy its burden of proving that IBM possessed monopoly power in these markets. Monopoly power is defined as the power to control prices or exclude competition. *United States v. E. I. du Pont de Nemours & Co., supra,* 351 U.S. at 391, 76 S.Ct. 994. In *United States v. Grinnell Corp., supra,* 384 U.S. at 571, 86 S.Ct. at 1704, the Supreme court indicated that "[t]he existence of such power ordinarily may be inferred from the predominant share of the market." However, in *Pacific Coast Agricultural Export Ass'n v. Sunkist Growers, Inc.*, 526 F.2d 1196, 1204 (9th Cir. 1975), *cert. denied,* 425 U.S. 959, 96 S.Ct. 1741, 48 L.Ed.2d 204 (1976), the Ninth Circuit stated that "it is now well settled that market share, while being perhaps the most important factor,

[2] By agreement of the parties, this failure of proof affects the attempt to monopolize claim as well as the monopolization claim.

does not alone determine the presence or absence of monopoly power." IBM contends that the evidence precludes an inference of monopoly power from its market share, and that the evidence affirmatively demonstrates the absence of monopoly power.

In *United States v. Aluminum Co. of America,* 148 F.2d 416, 424 (2d Cir. 1945), Judge Learned Hand said, "The percentage we have already mentioned—over ninety—. . . is enough to constitue a monopoly; it is doubtful whether sixty or sixty-four percent would be enough; and certainly thirty-three percent is not." Because market share does not alone determine the presence or absence of monopoly power, neither the Supreme Court nor the Ninth Circuit has been able to improve on these guidelines during the more than thirty years since that case was decided. *See Greyhound Computer Corp., Inc. v. International Business Machines Co., supra,* at 496 n. 18. However, the court in *Greyhound* indicated another factor to be considered:

> The record indicates that IBM's market share is declining. A declining market may reflect an absence of market power, but it does not foreclose a finding of such power. *Id.* [Citations omitted.]

In this case, Memorex offered evidence of relatively high IBM market shares, but even this evidence indicates that its shares were declining.

[7] Because the court feels that Memorex's market share evidence is inaccurate, no extended discussion of the effect of these shares is necessary. Memorex's market expert stated that he used installed base figures to calculate IBM's market shares. Installed base figures attribute all products IBM has ever manufactured to its shares, regardless of who owns the products. Thus, these figures lump past manufacturers with present, and include products over which IBM no longer has any pricing discretion. To determine a firm's monopoly power as of a given date, its current market share is the relevant figure and is normally measured in terms of current output. *See* P. Areeda &

D. Turner, *Antitrust Law* ¶ 520, at 350 (1978). Memorex's market expert conceded that current output figures are normally used, and offered no convincing reason for treating these markets differently. He also conceded that exclusion of products sold by IBM in earlier years would reduce its market shares. Monopoly power should not be inferred from such questionable evidence.

[8] There was also considerable evidence that regardless of IBM's market shares, it lacked the power to control prices or exclude competition in these markets. Both competitors and customers of IBM in the computer industry stated that the industry is extremely competitive. In addition, IBM was forced to lower its prices on numerous occasions to prevent plug compatible manufacturers from squeezing it out of these markets entirely. A substantial number of new competitors entered these markets and the degree of product innovation is high. Viewing this evidence as a whole, the court concludes that there is not substantial evidence present that could support a finding by reasonable jurors that Memorex has satisfied its burden of proving that IBM possessed monopoly power in the markets it defined. It is hereby ordered that IBM's motion for a directed verdict on this ground is granted.[3]

II. *PRICING:*

Memorex challenged the prices at which IBM sold a number of its products. IBM has argued throughout this litigation that prices may be predatory only when they are below marginal or average variable cost. Memorex concedes that it made no effort to prove that IBM's prices were below this level, so, if IBM is correct about the standard to be applied, the court should direct a verdict in its favor on the pricing issues. Even under the standard proposed by the court, IBM contends that it reduced prices to meet lower prices of its competitors,

[3] This failure of proof affects only the monopolization claim.

and that Memorex has failed to satisfy its burden of proving that IBM was sacrificing present profits to obtain supranormal profits in the future.

[9] In *Hanson v. Shell Oil Co.*, 541 F.2d 1352 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074, 97 S.Ct. 813, 50 L.Ed.2d 792 (1977), the Ninth Circuit discussed predatory pricing. An excerpt from this opinion follows:

> To demonstrate predation, Hanson had to show that the prices charged by Shell were such that Shell was foregoing present profits in order to create a market position in which it could charge enough to obtain supranormal profits and recoup its present losses. This could be shown by evidence that Shell was selling its gasoline at below marginal cost or, because marginal cost is often impossible to ascertain, below average variable cost.[5]
>
> [5 An alternative possibility might be a showing that the defendant charged a price which, although above marginal or average variable costs, was below its short run profit-maximizing price and that barriers to entry were great enough to prevent other entry before the predator could reap the benefits of his oligopolistic or monopolistic market position. There is some question, however, whether pricing below a profit maximizing point which is still above marginal and average variable costs should be considered predatory; it only discourages inefficient new entrants who must have higher prices to survive.]

Hanson made no effort to prove that the prices Shell was charging at either the wholesale or the retail level were below marginal or average variable costs, and for all that appears Shell's new pricing policies were nothing more than an attempt to gain a larger share of the market because of its stronger competitive position. If its prices were above its costs, and nevertheless Shell's did drive Hanson out of business, this can only be because Hanson was so inefficient that at prices at

which Shell could make a reasonable profit he could not. The antitrust laws were not intended, and may not be used, to require businesses to price their products at unreasonably high prices (which penalize the consumer) so that less efficient competitors can stay in business. The Sherman Act is not a subsidy for inefficiency. Hanson's failure to show that Shell's prices were below its marginal or average variable costs was a failure as a matter of law to present a prima facie case under § 2.

Id. at 1358-59. [Citations omitted.]

The court interprets this case as establishing two tests for predatory pricing: (1) pricing below marginal or average variable costs, and (2) pricing above marginal or average variable costs but below the short run profit-maximizing price where barriers to entry are high. Hanson lost because he failed to satisfy the first test. There is no indication that he offered any evidence that would have invoked the second.

The court in *Hanson* cited *International Air Industries, Inc. v. American Excelsior Co.*, 517 F.2d 714, 723-24 (5th Cir. 1975), to support this dual test. In that case, plaintiffs argued that the district court should have directed a verdict in its favor on its Robinson-Patman Act price discrimination claim. The Fifth Circuit indicated that the basic substantive issues raised by the Robinson-Patman Act and the Sherman Act were identical. In affirming the lower court's refusal to direct a verdict for plaintiffs, the Fifth Circuit said, "When price discrimination exists—as in the case before us—we see no reason to depart from the average variable cost test for predation unless it can be shown that there are significant barriers of entry in the relevant market." *Id.* at 724. The court expanded on this statement in a footnote:

> We employ the profit maximizing standard only because of our deference to a situation in which a monopolist could drive a slightly less efficient firm out of the market by charging a price above its own average cost, but then

> charge a very high price because of the difficulty of new entry. This standard should be applied only when the barriers to entry are extremely high. The lower the barriers to entry to a market, the closer to marginal cost a monopolist would have to set its price in order for a plaintiff to prevail as a matter of law, for we see no social utility in insuring the survival of inefficient firms where a new entry is possible. *Id.* at 724-25, n. 31.

As the court noted, "If a discriminator's price in the competitive market increases his new revenues in the short run, he will have no need to 'subsidize' losses in the competitive market with the profit from his other market." *Id.* at 725. While these comments were made in the context of a price discrimination claim, they are equally applicable to Memorex's theory of price balancing. Price balancing is defined by Memorex as lowering prices for a product in a competitive market and at the same time raising prices for a different product in a market without substantial competition. The second test for predatory pricing should be applied only in the limited circumstances described above, and should probably be considered an exception to the marginal or average variable cost test rather than an independent test itself.

The Ninth Circuit recently discussed predatory pricing again in *Janich Bros., Inc. v. American Distilling Co.*, 570 F.2d 848 (9th Cir. 1977). The court said, "As implied in *Hanson*, an across-the-board price set at or above marginal cost should not *ordinarily* form the basis for an antitrust violation." *Id.* at 857. [Emphasis added.] This statement indicates that the exception for a market with high barriers to entry is still recognized. The court added, "[A]s stated in *Hanson*, average variable cost can be used as evidence of marginal cost." *Id.* at 858. In affirming the district court's direction of a verdict in favor of American, the Ninth Circuit concluded:

> On the basis of the present record, and even assuming that the products were sold at the prices indicated on the price list, Janich has not come forth with sufficient evidence to go

to the jury on a contention that American sold gin and vodka below average variable cost for the period 1961-62. *Id.*

As was the case in *Hanson,* there is no indication that Janich offered any evidence that barriers to entry in the relevant market were high.

Memorex concedes that it offered no evidence that any of IBM's prices were below its marginal or average variable costs. Thus, Memorex did not satisfy the first test for predatory pricing set forth in *Hanson.* Memorex did offer evidence that the barriers to entry in the markets it defined were high, attempting to invoke the second test or the exception to the marginal or average variable cost test from *Hanson.* IBM contends that Memorex has failed to satisfy its burden of proving that the barriers to entry in these markets were high or that IBM's prices were below its short run profit-maximizing prices. IBM further contends that it reduced prices to meet lower prices of its competitors.

[10] The "meeting competition" defense is similar to a statutorily recognized defense to a price discrimination charge under the Robinson-Patman Act. *See* 15 U.S.C. § 13(b). A company should not be guilty of predatory pricing, regardless of its costs, when it reduces prices to meet lower prices already being charged by its competitors. To force a company to maintain non-competitive prices would be to turn the anti-trust laws on their head. Such a price cut cannot create the kind of market position that the prohibition of predatory pricing was meant to preclude. The evidence in this case indicates that IBM's prices for the 2319 disk drives, the Fixed Term Lease Plan, and the 3705 communications control unit were set at a level established by Memorex and the other plug compatible manufacturers. In fact, IBM's prices were higher in most instances even after the reductions. Memorex will not be heard to complain that they should have been still higher so that it could take even more business away from IBM.

To satisfy the second test or the exception to the marginal or average variable cost test from *Hanson,* Memorex had to prove that IBM was sacrificing present profits to obtain supernormal profits in the future. If IBM were able to force the plug compatible manufacturers out of the markets defined by Memorex, it would still face competition from leasing companies and other systems manufacturers. However, even discounting the importance of this check, Memorex had to show that IBM's prices were below its short run profit-maximizing prices and that barriers to entry in these markets were high.

[11] The court in *International Air Industries, Inc. v. American Excelsior Co., supra,* indicated that this second test or exception to the first should only be used when the barriers to entry were "extremely high." The evidence in this case indicates that entry into the markets defined by Memorex was not overly difficult. Memorex itself made the change over from original equipment to plug compatible manufacturer very quickly. Other companies have been able to enter the plug compatible markets directly, and systems manufacturers have also entered with relative ease. In these circumstances, IBM had little prospect of future gain by undercutting its current competitors.

Finally, Memorex has not offered any convincing evidence that any of IBM's prices were not considered to be short run profit-maximizing when they were adopted. There is some testimony from a Memorex expert that a few of the thousands of possible configurations of the 3705 communications control unit were priced below IBM's total costs. However, IBM successfully impeached this after-the-fact analysis, and in *Janich Bros., Inc. v. American Distilling Co., supra,* at 856-57, the court indicated that the proper focus is on the product line as a whole. The evidence on IBM's other product prices does not even speak to their short-run profitability.

For the reasons indicated above, the court concludes that viewing the evidence as a whole, there is not substantial evidence present that could support a finding by reasonable

jurors that the prices for any of IBM's products were predatory. Memorex did not even try to satisfy the first test for predatory pricing from *Hanson,* and it failed to satisfy the second or the exception to the first. The tests are the same even if evidence of price discrimination or price balancing is offered. In addition, even if its prices were below the levels established by these tests, IBM has established the meeting competition defense. It is hereby ordered that IBM's motion for a directed verdict on this ground is granted.[4]

III. *DAMAGES:*

In its final damage claim, Memorex sought to recover $306,580,000 for injuries suffered as a result of IBM's alleged anti-trust violations.[5] Memorex calculated its damages by measuring the difference between forecasted and actual results for certain of its products. IBM contends that Memorex's proof on its damage claim was fatally speculative. Because damages were not related to individual IBM acts, IBM asserts that there was no reasonable basis in fact for the jury to determine what the effect on damages would be if it found one or more of the challenged acts lawful. IBM also asserts that Memorex improperly attributed all of its shortfall in anticipated revenues to IBM's alleged antitrust violations despite the presence of other adverse factors.

In *Bigelow v. RKO Radio Pictures, Inc.,* 327 U.S. 251, 264, 66 S.Ct 574, 579, 90 L.Ed. 652 (1946), the Supreme Court indicated that "even where the defendant by his own wrong has

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[4] As will be discussed more fully below in the section on damages, Memorex has structured its damage claim in such a way that it is impossible to separate the injury it suffered from IBM's pricing practices from the injury it suffered from IBM's other acts. The court's ruling on the pricing issues is, therefore, dispositive of the entire action.

[5] As originally presented, the Memorex damage claim was $333,345,000. Subtracting damages for the Madrid claim on which the court has already directed a verdict in favor of IBM leaves $306,580,000.

prevented a more precise computation, the jury may not render a verdict based on speculation or guesswork." The Ninth Circuit expressed the same idea in *Flintkote Co. v. Lysfjord,* 246 F.2d 368, 393-94 (9th Cir.), *cert. denied,* 355 U.S. 835, 78 S.Ct. 54, 2 L.Ed.2d 46 (1957), where it said:

> We recognize the fact that as we examine this feature of the case, injured plaintiffs and a wrongdoing defendant face the court. In such a context the record will not ordinarily be searched with a microscopic eye. Yet something better is required to sustain a jury verdict than an interested guess.

IBM argues that a jury verdict based on the evidence offered by Memorex on its damage claim in this case would be no more than a guess.

[12] According to IBM, Memorex's damage evidence was defective because it did not provide any means for determining how much Memorex was injured by any IBM act considered by itself. Memorex's damage expert professed to be unable to isolate the impact of each act. However, IBM offered evidence, and the court concludes, that there were alternatives to these lump sum figures. Adjustments to Memorex's pre-impact forecasts after each IBM act would have given the jury a reasonable measure of the impact of that act. Memorex was able to make after-the-fact adjustments in its pre-impact forecasts where this was necessary to increase its damage claim. The way Memorex structured its damage claim there was no basis in the record for the jury to determine what the effect on damages would be if it found one or more of the challenged acts lawful. Thus, if one of IBM's acts was not a violation of the antitrust laws, much of the damage claim would become invalid. In addition, even if the jury found IBM guilty of every violation alleged, there was no basis for it to independently evaluate what the separate effect of each violation was. It would have to take Memorex at its word. In either case, a verdict rendered on the damage evidence offered by Memorex would have been speculative.

Memorex's damage expert stated that its damage claim had not been adjusted to take account of adverse factors other than IBM's alleged antitrust violations. Although another Memorex witness testified that the effect of these factors was implicit in at least some of Memorex's forecasts, the jury would have had to take Memorex at its word that their influence was properly reflected. In *Bigelow v. RKO Radio Pictures, Inc., supra,* 327 U.S. at 264, 66 S.Ct. at 579, the Supreme Court said:

> . . . [I]n the absence of more precise proof, the jury could conclude as a matter of just and reasonable inference from proof of defendants' wrongful acts and their tendency to injure plaintiffs' business, and from the evidence of the decline in prices, profits and values, *not shown to be attributable to other causes,* that the defendants' wrongful acts had caused damage to the plaintiffs. [Emphasis added.]

IBM offered evidence of a number of factors other than its allegedly illegal conduct that had an adverse effect on Memorex's operations during the relevant time period. These include: (1) Memorex's own mismanagement and the failure of other portions of its business to perform up to expectations; (2) adverse comment on Memorex in the financial community; (3) the recession in the early 1970's; (4) competition from other companies; and (5) lawful competition from IBM. Because Memorex failed to explain away the effect of any of these factors, the court concludes that a jury verdict rendered on Memorex's damage evidence would have been speculative.

Memorex conceded that it had management problems in the early 1970's. In *Capra, Inc. v. Ward Foods, Inc.,* 536 F.2d 39, 52 (5th Cir. 1976), the court said:

> In addition to *presuming* the accuracy of both [financial] statements, [the Jacks Report] *assumed* out any effect of poor management. The proposition is elementary that estimates and opinions may be based upon assumptions,

> *but only so long as* the assumptions rest on adequate data. Here the ultimate conclusion was taken as "given". The award is bereft of evidentiary support; it accordingly fails. [Emphasis by the court.]

The damage evidence offered by Memorex suffered from the same defect. There is also evidence in the record that other portions of Memorex's business failed to achieve projected results. These shortfalls may have had a carry-over effect in the markets where Memorex competed with IBM, especially in the systems market where Memorex was in desperate need of capital. Memorex's management problems had a public relations aspect as well. Their exposure in the financial press affected Memorex's ability to raise money.

[13] Memorex did not dispute the fact that there was a recession in the early 1970's. Industry conditions were considered an important factor in the calculation of damages by the Ninth Circuit in *Sunkist Growers, Inc. v. Winkler & Smith Citrus Products Co.*, 284 F.2d 1, 31, 33 (9th Cir. 1960), *rev'd on other grounds*, 370 U.S. 19, 82 S.Ct. 1130, 8 L.Ed.2d 305 (1962). The condition of the overall economy should be no less important a factor. Memorex offered no evidence of the effect of the recession on its operations and hence its damage claim.

Memorex also focused on IBM's alleged antitrust violations to the exclusion of competition from other plug compatible manufacturers. Its own salesmen were warning that Memorex was in a position to lose business to these competitors for the same reason that it was able to take business away from IBM. Their prices were lower. The court in *Delaware Valley Marine Supply Co. v. American Tobacco Co.*, 184 F.Supp. 440, 447 (E.D.Pa. 1960), indicated that competition from third parties was a factor the plaintiff should take into account. Memorex has not done so in its damage claim. In addition, during the relevant time period, IBM introduced a number of products in the markets defined by Memorex as to which no challenge is made. Failure to separate out the effect of lawful

from unlawful competition was a factor in the Second Circuit's affirmation of the district court's exclusion of plaintiff's damage evidence in *Herman Schwabe, Inc. v. United Shoe Machinery Corp.*, 297 F.2d 906, 911 (2d Cir.), *cert. denied*, 369 U.S. 856, 82 S.Ct. 1031, 8 L.Ed.2d 85 (1962).

In addition to arguing that failure to explain why the effect of these five factors made it impossible for the jury to independently assess the extent of damage Memorex suffered as a result of IBM's alleged antitrust violations, IBM also asserts that there were erroneous assumptions in Memorex's forecasts. First, IBM argues that the 1270 communications control unit forecast was based on certain features being available at specified dates, and that when these features were not delivered on time, the attractiveness of the Memorex product was reduced. The 1270 forecast also assumed that there would be no competitive response like the 3705 from IBM. Second, the systems forecast assumed a substantial mix of Memorex/50's while the overwhelming percentage of Memorex computers actually placed were Memorex/40's. Third, the 660 disk drive forecast depended on the assumption that only 2314-type disk drives would be attached to the IBM System/370 Models 135 and 145 computers, when IBM predicted that more than half of its customers would use the 3330 disk drive. Memorex made no effort to adjust these forecasts to reflect the results of actual experience, yet it was able to adjust its 1270 forecast upward when the product exceeded its earlier projections.

[14] In the *Herman Schwabe, Inc. v. United Shoe Machinery Corp., supra*, 297 F.2d at 912, the Second Circuit cautioned that courts must carefully evaluate damage evidence where plaintiff offers

> . . . an array of figures conveying a delusive impression of exactness in an area where a jury's common sense is less available than usual to protect it. It might indeed have been possible for a judge, with days in which to study the exhibits of plaintiff's expert, to come up with some rational

> computation of damages, on a theory wholly different from what the expert advocated, that would satisfy the Supreme Court's modest requirements in this area; it would be foolhardy to expect a jury to do so.

For the reasons indicated above, the court concludes that viewing the evidence as a whole, there is not substantial damage evidence present on which reasonable jurors could base a verdict for Memorex that would not be speculation or guesswork. An injured plaintiff need not show the amount of his damages with precision, but he must provide the jury with a theory of recovery that is both reasonable and the best measure available. Memorex has not done so in this case.

It is hereby ordered that IBM's motion for a directed verdict on this ground is granted.

IV. *ACTS:*

Memorex challenged a number of IBM acts on a number of grounds. These acts include: (1) not disclosing interface information until first customer shipment of a product; (2) the introduction of the Fixed Term Plan; (3) the introduction of the 2319A and 2319B disk drives; (4) the introduction of the New Attachment Strategy; (5) the announcement of the 3705 communications control unit; and (6) the announcement of the System/370 Models 125 and 115. Memorex claims that this conduct was anticompetitive and predatory and unnecessarily excluded competition. *Greyhound Computer Corp. Inc. v. International Business Machines Co., supra,* at 498. IBM contends that these acts were nothing more than reasonable responses to competition. *Id.* at 498-99. The court will discuss each of these acts in turn.

(1) *INTERFACE DISCLOSURE:*

[15] Memorex challenged IBM's policy of not disclosing interface information until first customer shipment of its products. Memorex claimed that plug compatible manufacturers needed this information at the time of product announcement

in order to compete with IBM. IBM contends that it had no duty to disclose interface information, and that what Memorex sought was more than just the physical description of the interconnections between IBM products.

> The parties agreed definition of an interface is
>
> A shared boundary which enables transfer of information in accord with a prescribed format, sequence, timing and encoding. An interface may refer to either hardware or software or a combination of both.

At trial, Memorex used the analogy of an electric plug and a wall socket to describe the physical interconnections between the component devices in a computer system. IBM argues that the mechanical, electrical, and logical information which Memorex sought makes this analogy an oversimplification. While the physical description of an electric plug reveals very little about the nature of the device at the end of the cord, the same is not true of a computer "plug." IBM offered evidence, and the court concludes, that the kind of information Memorex sought would reveal valuable information about the design of the products involved.

Memorex conceded that IBM's disclosure policy was as forthcoming as any in the industry, including its own. In point of fact, interface information is never disclosed as such, but rather is gleaned from maintenance manuals that are published for and distributed with each product. IBM argues that this information is a trade secret, and that it needs the lead time created by not disclosing this information until first customer shipment to recover its product development costs. In *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 94 S.Ct. 1879, 40 L.Ed.2d 315 (1974), the Supreme Court held that state trade secret protection is not pre-empted by the federal patent laws. The Court indicated that one of the stated policies behind trade secret law was "the encouragement of invention." *Id.* at 481, 94 S.Ct. 1879. It emphasized that just because a discovery

might not be patentable did not " 'destroy the value of the discovery to one who makes it, or advantage the competitor who . . . obtains the desired knowledge without himself paying the price in labor, money, or machines expended by the discoverer.' " *Id.* at 482, 94 S.Ct. at 1886. The Court recognized that "[a] trade secret, however, does not offer protection against discovery by fair and honest means, such as by independent invention, accidental disclosure, or by so-called reverse engineering, that is by starting with the known product and working backward to divine the process which aided in its development or manufacture." *Id.* at 476, 94 S.Ct. at 1883.

IBM argues that Memorex should be limited to reverse engineering its interfaces with the help of the maintenance manuals. Memorex contends that it should have access to this information at the time of product announcement under some sort of licensing arrangement. It cited no authority in support of its position, but even if it could, the court concludes that Memorex has not shown that it and other plug compatible manufacturers cannot compete with IBM under present circumstances. Memorex's replacements for IBM products have been profitable, and as its own technical capabilities have improved, it has been able to reduce IBM's lead time considerably. The same is true of other competitors who have continued to enter the plug compatible markets. Depriving IBM of its lead time would remove its incentive to invent.

(2) *THE FIXED TERM PLAN:*

[16] Prior to the introduction of the Fixed Term Plan (FTP) in May 1971, IBM only leased its peripheral equipment for 30 days. These 30-day leases put IBM at a competitive disadvantage because most of its competitors, including systems and plug compatible manufacturers and leasing companies, offered longer term leases at a discount. In addition, there was a recession in 1970-71 which caused computer users to cut back the amount of equipment they had on lease. IBM equipment on 30-day lease was more easily discontinued than competitive

equipment. Both IBM and its competitors recognized that if IBM did not respond to this competition, it would be forced out of the peripheral equipment markets.

FTP gave customers the option of leasing certain IBM peripheral equipment for one year at an 8% discount or two years at a 16% discount. Memorex asserts that FTP was an illegal price cut. As discussed above in the section on pricing, Memorex did not allege that FTP prices were below marginal or average variable cost. Rather, it asserts that IBM expected its revenues and profits from the products covered by FTP to decrease during the first 18 months of the program. However, there is no evidence that the overall profitability of the program depended on later price increases to recoup present losses. IBM offered evidence that its FTP revenues and profits would increase over time as a result of additional placements and extended product lives. The traditional object of a price cut is to make up lost profits per unit with increased volume, and the court concludes that this is what IBM was attempting to do with FTP. The fact that this price cut took place in a lease context where profitability depends on both the lease rate and the revenue-producing life of a product should not be allowed to cloud the issue.

Memorex also asserts that the one and two year leases locked out IBM's competitors during the term of the lease. In addition to the fact that these competitors offered even longer term leases and the fact that IBM still offered customers the option of a 30-day lease, the FTP lease terms were not so long as to have any significant lockout effect. *See United States v. United Shoe Machinery Corp.,* 110 F.Supp. 295 (D.Mass. 1953), *aff'd per curiam,* 347 U.S. 521, 74 S.Ct. 699, 98 L.Ed. 910 (1954) (approving five-year lease terms). In *Greyhound Computer Corp., Inc. v. International Business Machines Co., supra,* at 498-99, the Ninth Circuit held that as to FTP, "Greyhound failed to show that IBM's action with respect to peripheral equipment was anything more than a reasonable

response to competition." The court concludes that Memorex's proof suffers from the same failure.

(3) *THE 2319A and 2319B DISK DRIVES:*

The 2319A was a 3-spindle version of the IBM 2314 series disk drive which had been modified to allow attachment to the integrated file adapter (IFA) of the System/370 Models 135 and 145. The IFA supplied low-cost disk control function for these 370 models by eliminating the need for a channel and separate disk drive control unit. Memorex conceded that the IFA was a technological innovation which represented a cost saving to the user. In the design stage, IBM considered attaching several different disk drives to these intermediate systems. Memorex claims IBM chose the 2319A because it involved a change in interface that would assure that the first three drives attached to the central processing unit were IBM drives. It also challenged the price at which IBM offered the 2319A to customers. IBM contends that the 2319A, including the interface change, was based on sound engineering considerations, and led to the introduction of a better product at a lower price.

The interface change between the 2314 series disk drives and the 2319A was primarily the result of moving the customer engineering panel and the mixer board from the central processing unit to the drive. Memorex asserts that IBM's Apricot plan, which was one of the alternatives considered, would have resulted in an interface compatible with IBM's 2314 series disk drives, while the 2319A was introduced with a different interface. IBM argues that there were technological justifications for the new interface, and that neither Memorex nor any other plug compatible manufacturer had ever used the old interface so that Memorex disk drives would not have been compatible with the IFA under any circumstances.

[17] Memorex's expert testified that there were sound reasons for the change on both sides of the interface. Locating the customer engineering panel in the disk drive reduced

maintenance time and interference with the central processing unit. He also indicated that the gating circuits found in the 2319A mixer board are best located in the drive. Moving these two assemblies out of the central processing unit saved space which was an important consideration in the design of the intermediate System/370 processors, especially the Model 135. Despite these advantages, Memorex's expert still maintained that the Apricot plan was superior. Where there is a difference of opinion as to the advantages of two alternatives which can both be defended from an engineering standpoint, the court will not allow itself to be enmeshed "in a technical inquiry into the justifiability of product innovations." *Response of Carolina, Inc. v. Leasco Response, Inc.*, 537 F.2d 1307, 1330 (5th Cir. 1976).

[18] IBM offered uncontroverted evidence that Memorex and other plug compatible manufacturers did not attach their disk drives at the interface between IBM's 2314 series disk drives and disk drive control units, but instead marketed entire replacement subsystems. Thus, Memorex would have had to make a change in its interface even if IBM had adopted the Apricot plan. Because Memorex never completed work on either interface, there is no real indication whether it would have found the new interface more difficult to reverse engineer than the old. An IBM expert testified that he had duplicated the new interface in six and one-half man weeks. The court does not see how Memorex was injured by this interface change.

The 2319A was priced by IBM at $1,000 or $333 per spindle. Memorex did not allege that this price was below marginal or average variable cost. Rather, it asserts that IBM should have adopted a price of $1,400 or $467 per spindle because IBM's financial analysis showed that at that price the drives themselves would generate greater revenue and profit. IBM offered evidence that its financial analysis also showed that its overall revenues and profits would be higher at the an-

nounced price because of additional sales of disk drives and systems beyond the 2319A's themselves. The court concludes that IBM's choice was proper. There is no evidence that the profitability of the 2319A depended on a future price increase, and even at the lower price, IBM's price was above that of its competitors in most instances.

The 2319B was a lower cost, modified 3 spindle version of the 2319 disk drive for use on systems that did not offer the IFA feature. It attached to a 2314B disk drive control unit which connected to the central processing unit through a channel. This subsystem could be connected to any IBM system that had a channel, but was primarily attractive to System/360 users. The 2319 disk drive was primarily a reuse program. These drives were manufactured from 2313 series disk drives which were being displaced in the field by large System/370 models which used a later generation disk drive as well as by plug compatible disk drives. Memorex again challenged the engineering justification for the interface change between the 2319B and the 2314B, and the price at which IBM offered the 2319B to customers. IBM again contends that Memorex had never used the old interface, and that the 2319B was essentially a price cut involving 2314 series disk drives to match the 2319A price.

In 1970, Memorex and other plug compatible manufacturers were offering 2314-type disk drives at prices considerably below IBM's. The 2319B was IBM's answer to this competition. The 2319B interface was different than the interface on the 2314 series disk drives. IBM argued that this difference facilitated field conversion to the 2319A in the event that the user elected to move to one of the 370 systems that offered the IFA, and permitted transfer to a 2319A in the event of lease cancellation. Putting this justification aside, the court does not see how Memorex was injured by this interface change. Memorex and the other plug compatible manufacturers connected to the channel interface, not to the 2314 disk drive control unit, and the channel interface did not change.

Memorex did not allege that the 2319B was below IBM's marginal or average variable cost, and there was no evidence that IBM was sacrificing present profits with the expectation of recouping its losses with subsquent price increases. After the 2319B price reduction, IBM's competitors further lowered their prices, and Memorex's prices remained below IBM's in all but two configurations. Memorex asserts that the 2319B enabled IBM to price discriminate, but there is evidence that the new IBM subsystem was made generally available.

The court concludes that the 2319A and 2319B were reasonable responses by IBM to competition from the plug compatible manufacturers. Both were price cuts and in conjunction with the IFA, the 2319A was a significant product innovation.

(4) *THE NEW ATTACHMENT STRATEGY:*

On August 2, 1972, IBM announced a number of new products that had been grouped together for a single announcement. Included in this announcement was the first of a series of products and central processing unit features which represented a different approach to the attachment of disk drives to computer systems. This approach has been termed the "New Attachment Strategy". It enables users to implement the disk control function in a variety of ways best suited to their individual needs. Memorex claims that IBM adopted the New Attachment Strategy because of all the possible alternatives, it had the greatest impact on plug compatible manufacturers in terms of interface changes. Memorex also challenged the prices at which IBM offered some of these products to customers. IBM contends that the New Attachment Strategy was an innovation, and that its prices were proper.

On IBM's System/360 computers, the disk drives and the disk drive control unit were separate boxes that connected to the central processing unit through a channel. The New Attachment Strategy altered this basic structure. In some cases, the disk control function was located partly in the central

processing unit and partly in the first box of a string of disk drives. The idea was to put the device independent electronics in the central processing unit and the device dependent electronics in the disk drive so that later generations of disk drives did not require entirely new control units. Only the device dependent electronics in the first box of the new disk drives had to be changed. In other cases, the device independent electronics were packaged in a separate box, but the operating principle was the same.

Memorex argued that IBM should have used what its expert termed the "Simple Attachment Strategy." This approach preserved the channel/control unit/disk drive structure, and would have required fewer interface changes. IBM contends, and the court concludes, that it was a misnomer to call this attachment strategy "simple." Under the New Attachment Strategy, the capacity of each control device was increased from 8 spindles to 32. In addition, the use of string switching permitted access to disk drives by more than one central processing unit. Duplicating the flexibility of the New Attachment Strategy is not always possible under the Memorex attachment strategy, and where it is, the equipment configurations are more complicated.

Memorex claimed that the announcement of the New Attachment Strategy forced it to change some of its product designs early in the Memorex product cycle, that the IBM control alternatives were not priced consistently, and that IBM's phased announcements made it more difficult for Memorex to keep pace. IBM contends that time limits cannot be put on product innovations, and that coordinating product announcements with the stages of follow-on design work is both necessary and proper. IBM further contends that even if it is assumed that the prices for the control alternatives under the New Attachment Strategy varied in their relationship to IBM's costs, a company is not required to price all of its products at a constant markup from cost. The court refused to do so in *United States v. United Shoe Machinery Corp., supra,* 110 F.Supp. at 349.

The court concludes that the New Attachment Strategy was a significant innovation. At most, Memorex has only been able to show that there was an alternative approach available. Where the approach chosen was at least as justifiable as the alternative, and in this case it appears to have been superior, courts should not get involved in second guessing engineers. *Response of Carolina, Inc. v. Leasco Response, Inc., supra.* The New Attachment Strategy was a reasonable response to competition.

(5) *THE 3705 COMMUNICATIONS CONTROL UNIT:*

Teleprocessing involves the communication of data between computer devices which are separated geographically and connected only by telephone or similar communications lines. Communications control units are generally located in proximity to a host processor, and perform the function of controlling the flow of data between the host processor and other devices that are remote from it. Teleprocessing first became generally available with IBM's introduction of the System/360 line of computers. The communications control units announced for use with System/360 were the 2701, 2702, and 2703 (the 270X series). These control units were introduced in 1964, and while they were innovative for their time, they were of limited flexibility because they were hardwired. A hardwired control unit is one whose function is controlled by its physical hardware. Its performance cannot be altered without rewiring it.

In the late 1960's, plug compatible manufacturers began to market communications control units in competition with the 270X. Memorex's entry was called the 1270. Like the 270X, the 1270 was hardwired. However, because the 1270 was announced in 1970, Memorex was able to take advantage of dramatic improvements in technology that took place after the 270X had been designed. Memorex was able to price its control unit below IBM's, and to offer more features. Thus, the 270X was becoming increasingly obsolete even as compared to

other hardwired control units. Of greater long-run concern to IBM was the emerging competition from programmable communications control units. In contrast to a hardwired control unit, a programmable control unit is a stored program computer, and some of its functions can be varied simply by changing the software programming which runs it.

The trend in the industry was toward programmability, and the experts for both parties agreed that programmable control units had a competitive advantage. IBM sought to meet this competition with the introduction of the 3705 programmable communications control unit which was announced in March 1972. At the same time, IBM announced that two control programs would be available for this unit: an Emulator Program (EP) which would be available at the time of first customer shipment, and the more advanced Network Control Program (NCP) which was expected to be available by March 1973. EP made the 3705 perform as if it were one or more 270X's. Memorex did not really contest the fact that the 3705 was a product innovation. However, it challenged the pricing of the 3705, and the accuracy of the NCP announcement. IBM contends that both were proper.

By virtue of the fact that it was built later than the 270X, the 3705 was able to incorporate more modern circuitry, was more compact, could support more lines, and had better diagnostics. However, the major advantage was that it was programmable. In teleprocessing, users desire flexibility because they often change the configuration of their network, either by adding terminals or by changing the type of terminals. Programmable control units facilitate these changes. Memorex suggested that because EP was designed to allow the 3705 to emulate the function of the 2701, 2702, and 2703 control units, the 3705 with EP was not really an innovation. It is undisputed that even with EP, the 3705 allowed for much simpler transitions between the various configurations supported by the 270X control units because it had the capacity to emulate all of the 270X's hardware configurations. The 3705 with EP offered a

number of other minor advantages as well, but its real value was as a migration aid to more sophisticated programming. The court concludes that even with EP, the 3705 was a product innovation. The 3705 with NCP was an even greater innovation because it had the ability to offload functions from the central processing unit.

[19] Memorex did not allege that the 3705 price was below IBM's marginal or average variable cost. Memorex offered evidence, which IBM disputed, that the price of a few of the many configurations of the 3705 did not return all of IBM's costs that might have been allocated to these products. However, Memorex conceded that the overall program was projected to be profitable, and this is the proper focus. *Janich Bros., Inc. v. American Distilling Co., supra.* There is no evidence that IBM was sacrificing present profits with the expectation of recouping its losses with subsequent price increases. The 3705 price while lower than the 270X price, was still higher than the price for Memorex's 1270. The court concludes that this price reduction was necessary to meet lower prices of IBM's competitors.

It was never entirely clear to the court what Memorex claimed was inaccurate about the announcement of NCP. The 3705 announcement had indicated that NCP would be available in March 1973. The actual delivery of NCP slipped six months to October 1973, but delivery slippages are not uncommon for complex new products in the computer industry. There is no evidence to suggest that when IBM announced NCP for delivery in March 1973, it did not honestly expect the product to be available at that time. Memorex argued that various internal IBM documents indicated that the Telecommunications Access Method (TCAM) which was the access method chosen to operate with NCP would not work. An accesss method is a program that resides in the host processor and performs the function of receiving the data from the communications control unit. IBM offered evidence that TCAM is in actual operation in

a number of teleprocessing systems. The only problem with TCAM was that relatively few customers were using it, and it would be difficult to convince those who were using other access methods to switch. However, the fact that TCAM might have had limited market appeal did not make the NCP announcement misleading because the announcement made it clear that TCAM was required if a customer desired to use NCP. The court concludes that there was nothing knowingly false about the NCP announcement, and that the 3705 communications control unit was a reasonable response to competition.

(6) *THE SYSTEM/370 MODELS 125 and 115:*

The System/370 Models 125 and 115 were IBM central processing units that were announced in October 1972 and March 1973, respectively. These processors were designed and marketed as low-end systems in the System/370 line of computers. It was anticipated that these two models would be fully compatible with the more advanced processors in the 370 family, and that they would provide a migration path for users of IBM's small systems such as the System/360 Model 20 and the larger models in the System/3 line. The 125 was initially planned to be the bottom entry in the 370 family. However, when it became apparent that the 125 would not meet its price objective, the lower-priced 115 was developed. It was intended that the Winchester disk drive would be the primary disk storage device for both these processors. Because the Winchester was not ready at the time of first customer shipment of the 125, IBM ultimately decided to attach the Merlin disk drive until the Winchester became available. The Merlin offered better price/performance than the older technology 2311 and 2314 series disk drives, and converting from Merlin to Winchester only required a simple change of microprogramming in the disk control device. The Winchester disk drive was available at the time of first customer shipment of the 115.

Disk drives were attached to both the 125 and 115 through a direct disk attachment (DDA) device. The DDA was part of the New Attachment Strategy, and was similar in principle to the integrated file adapter in that it eliminated the need for a channel and separate disk drive control unit. Memorex argued that the 125 and 115 processors should have included a channel as well as the DDA. IBM contends that the cost of adding a channel would have defeated the low-price objective of these two models. Witnesses for both parties agreed that the DDA was the cheapest method for attaching disk drives. The additional cost of a channel would have had to have been borne by all users of the 125 and 115, regardless of whether they desired a channel. Furthermore, Winchester disk drives could not have been attached through a channel. The only benefit that would have been derived from the addition of a channel, the ability to do on-line data conversion, was accomplished in another manner.

IBM conceded that the DDA precluded attachment of 2311 and 2314-type disk drives, but it argued that other low-end computers, including Memorex's systems, have employed a design based on direct attachment of a limited range of disk storage devices to reduce costs. Another example of the emphasis on low cost attachment techniques in small systems was IBM's System/360 Model 20 which was the predecessor of the 125 and 115. It was uncontroverted that 2311-type disk drives and only 2311-type disk drives attached directly to the Model 20 processor, and that no channel was ever provided. In addition, there is evidence that Memorex was able to attach plug compatible disk drives to the 125 and 115 processors. The court concludes that the DDA was a product innovation, and that IBM was not required to provide a channel on the 125 and 115 to facilitate attachment of Memorex products.

[20] Memorex also suggested that the 125 and 115 processors impacted its systems program, but its own witnesses acknowledged that the losses from this venture resulted from a shortage of capital. Still another complaint was that the DDA

should have been separately priced. On the 115, the same circuits that comprise the DDA also perform other functions so they must be included in the processor in any event, and neither the 125 nor the 115 will function without the disk drives that the DDA attaches. Memorex's expert indicated that the lower prices made possible by direct attachment made the channel/control unit/disk drive attachments used on some larger systems noncompetitive. Even assuming that the DDA is a separate product, the antitrust laws do not require separate pricing when no competitive alternative is available. *Response of Carolina, Inc. v. Leasco Response, Inc. supra,* 537 F.2d at 1330 n. 50.

Finally, Memorex challenged the accuracy of the 115 announcement. It claimed that the memory offered with the 115 processor was not capable of supporting virtual storage in a multiprogramming environment as represented. Multiprogramming was defined as doing two or more jobs at the same time. Memorex's own expert testified that there were no untrue statements in the announcement materials, and that the 115 could operate in two partitions as required for multiprogramming. The court concludes that there was nothing misleading in the 115 announcement, and that both the System/370 Models 125 and 115 were reasonable responses to competition.

[21] The court has determined that all of the IBM acts challenged by Memorex were reasonable responses to competition. In the early 1970's Memorex and the other plug compatible manufacturers were making serious inroads into IBM's business. They had reverse engineered a number of the peripheral products that IBM marketed with the System/360 line of computers, and because they did not have to recover the costs of developing these products, they were able to undersell IBM. IBM met this competition by introducing a new generation of computers, the System/370, and by developing more advanced peripheral products that were able to take advantage of the latest technology and were offered to customers at lower prices.

Users clearly benefited from these product innovations and price cuts. They had a detrimental impact on Memorex and the other plug compatible manufacturers because of the need to undertake a new round of reverse engineering programs. However, this kind of conduct by IBM is presicely what the antitrust laws were meant to encourage. For the reasons indicated above, the court concludes that viewing the evidence as a whole, there is not substantial evidence present that could support a finding by reasonable jurors that any of IBM's acts were anticompetitive or predatory or unnecessarily excluded competition. Memorex sought to use the antitrust laws to make time stand still and preserve its very profitable position. This court will not assist it and the others who would follow after in this endeavor. It is hereby ordered that IBM's motion for a directed verdict on this ground is granted.

The court hereby grants IBM's motion for a directed verdict on all grounds stated, and finds that as a matter of law, the record in this case cannot justify a verdict by a reasonable jury in favor of Memorex.

Having ruled upon IBM's motion for a directed verdict, the court hereby makes a separate and distinct ruling in the event of a remand for retrial.

STRIKING OF THE JURY DEMAND IN THE EVENT OF A REMAND FOR RETRIAL

As indicated above, the jury in the trial of this action was asked to decide whether IBM monopolized or attempted to monopolize various markets in the computer industry. Memorex alleged that certain IBM price cuts and product changes in the early 1970's violated the antitrust laws, while IBM's defense contended that any injury suffered by Memorex was caused by poor management. Resolution of these issues required an understanding of a vast amount of advanced computer technology and sophisticated financial principles. The trial lasted for five months and consumed 96 trial days. The parties called

87 witnesses whose testimony filled more than 19,000 pages of transcript. More than 2,300 exhibits were admitted into evidence. After deliberating for 19 days, the jury reported itself hopelessly deadlocked, and the court declared a mistrial.

Before the jury was selected, IBM moved to strike Memorex's jury demand on the ground that the issues in the case were too complex for a jury to fairly decide. The court denied IBM's motion at that time, but since the trial ended as it did, the court feels that this question deserves further consideration in light of its experience.

The Seventh Amendment to the United States Constitution preserves the right of trial by jury "[i]n Suits at common law, where the value in controversy shall exceed twenty dollars." In England and in the federal courts in the United States until 1938, there was a clear division between law and equity. This situation changed with the adoption of the Federal Rules of Civil Procedure. In *Ross v. Bernhard,* 396 U.S. 531, 539-40, 90 S.Ct. 733, 739, 24 L.Ed.2d 729 (1970), the Supreme Court said:

> Under the Rules there is only one action—a "civil action"—in which all claims may be joined and all remedies are available. . . . Under the Rules, law and equity are procedurally combined; nothing turns now upon the form of the action or the procedural devices by which the parties happen to come before the court.

The Court indicated that "[t]he Seventh Amendment question depends on the nature of the issue to be tried rather than the character of the overall action." *Id.* at 538, 90 S.Ct. at 738. The Court continued in a footnote:

> As our cases indicate, the "legal" nature of an issue is determined by considering, first, the pre-merger custom with reference to such questions; second, the remedy sought; and, third, the practical abilities and limitations of juries. *Id.* at 538 n. 10, 90 S.Ct. 738.

The issue in *Ross v. Bernhard* was whether the Seventh Amendment guaranteed the right to a jury trial is stockholder's derivative actions. Rejecting the argument that the derivative action was an equitable device, the Court held that "the Seventh Amendment preserves to the parties in a stockholder's suit the same right to a jury trial that historically belonged to the corporation and to those against whom the corporation pressed its legal claims." *Id.* at 542, 90 S.Ct. at 740.

Before examining the nature of the issues in this case in terms of the three factors enumerated in *Ross v. Bernhard,* two other Supreme Court decisions must be considered briefly. In *Beacon Theatres, Inc. V. Westover,* 359 U.S. 500, 79 S.Ct. 948, 3 L.Ed.2d 988 (1959), and *Dairy Queen, Inc. v. Wood,* 369 U.S. 469, 82 S.Ct. 894, 8 L.Ed.2d 44 (1962), the court held that where equitable and legal claims are joined in the same action, there is a right to a jury trial on the legal claims which may not be infringed either by trying the legal issues as incidental to the equitable ones or by a court trial of a common issue existing between the claims. In *Beacon Theatres,* the Court said:

> The basis for injunctive relief in the federal courts has always been irreparable harm and inadequacy of legal remedies. . . . Inadequacy of remedy and irreparable harm are practical terms, however. As such their existence today must be determined, not by precedents decided under discarded procedures, but in the light of the remedies now made available by the Declaratory Judgment Act and the Federal Rules.
>
> 359 U.S. at 500, 79 S.Ct. at 954.

It continued later in the decision:

> Since in the federal courts equity has always acted when legal remedies were inadequate, the expansion of adequate legal remedies provided by the Declaratory Judgment Act and the Federal Rules necessarily affects the scope of equity.
>
> 359 U.S. at 509, 79 S.Ct. at 956.

In *Dairy Queen,* the Court said:

> The necessary prerequisite to the right to maintain a suit for an equitable accounting, like all other equitable remedies, is, as we pointed out in *Beacon Theatres,* the absence of an adequate remedy at law. Consequently, in order to maintain such a suit on a cause of action cognizable at law, the plaintiff must be able to show that the "accounts between the parties" are of such a "complicated nature" that only a court of equity can satisfactorily unravel them.
>
> 369 U.S. at 478, 82 S.Ct. at 900.

These cases demonstrate that the inadequacy of legal remedies is the primary basis for granting equity jurisdiction, and that the complexity of a case is relevant to this inquiry.

[**22**] Under the test set forth in *Ross v. Bernhard,* the nature of an issue is determined by looking first to the premerger custom. With reference to private antitrust actions, the Supreme Court in *Fleitmann v. Walsbach Street Lighting Co.,* 240 U.S. 27, 29, 36 S.Ct. 233, 234 (1916), indicated that "when a penalty of triple damages is sought to be inflicted, the statute should not be read as attempting to authorize liability to be enforced otherwise than through the verdict of a jury in a court of common law." *See also, Beacon Theatres, Inc. v. Westover, supra,* 359 U.S. at 504, 79 S.Ct. 948. These same comments are applicable to the consideration of the second factor deemed significant in *Ross v. Bernhard.* The remedy sought by Memorex for IBM's alleged antitrust violations is damages which has traditionally been regarded as a legal remedy. It is the third factor of the equation, the practical abilities and limitations of jurors, that causes the court to conclude that the issues in this case must be considered to be equitable.

In reaching this conclusion, the court recognizes that "[m]aintenance of the jury as a fact-finding body is of such importance and occupies so firm a place in our history and

jurisprudence that any seeming curtailment of the right to a jury trial should be scrutinized with the utmost care." *Dimick v. Schiedt,* 293 U.S. 474, 486, 55 S.Ct. 296, 301, 79 L.Ed. 603 (1935). However, "to hold that a jury trial is required in this case would be to hold that the Seventh Amendment gives a single party at its choice the right to an irrational verdict." *Bernstein v. Universal Pictures, Inc.,* 79 F.R.D. 59, at 71 (S.D.N.Y. 1978).

While there is no authority cited for the third factor in the *Ross v. Bernhard* test, in *Fowle v. Laurason,* 30 U.S. (5 Pet.) 495, 503, 8 L.Ed. 204 (1831), the Supreme Court said:

> In all actions in which an action of account would be the proper remedy at law . . . the jurisdiction of a court of equity is undoubted. It is the appropriate tribunal. But in transactions not of this peculiar character, great complexity ought to exist in the accounts, or some difficulty at law ought to interpose . . . in order to induce a court of chancery to exercise jurisdiction.

Some fifty years later in *Kirby v. Lake Shore & Michigan Southern Railroad Co.,* 120 U.S. 130, 134, 7 S.Ct. 430, 432, 30 L.Ed. 569 (1866), the Court said:

> The case made by plaintiff is clearly one of which a court of equity may take cognizance. The complicated nature of the accounts between the parties constitutes a sufficient ground for going into equity. It would have been difficult, if not impossible, for a jury to unravel the numerous transactions involved in the settlements between the parties, and reach a satisfactory conclusion as to the amount of drawbacks to which Alexander & Co. were entitled on each settlement.

Thus, at an early date, the Supreme Court recognized that equity had a special role to play in the trial of complex cases.

Several subsequent decisions suggested that mere complication of facts was not a sufficient basis for equity jurisdic-

tion. In *United States v. Bitter Root Development Co.*, 200 U.S. 451, 472-73, 26 S.Ct. 318, 325, 50 L.Ed. 550 (1906), the Supreme Court said:

> The bill shows that whatever was done in the way of cutting timber and carrying it away was done by the defendants as tort feasors, and the various devices alleged to have been resorted to by the deceased, Daly, by way of organizing different corporations in order to, as alleged, cover up his tracks, and to render it most difficult for the complainant to make proof of his action, does not in the least tend to give a court of equity jurisdiction on that account. It is simply a question of evidence to show who did the wrong and upon that point the fact could be ascertained as readily as law as in equity.

And in *Curriden v. Middleton,* 232 U.S. 633, 636, 34 S.Ct. 458, 58 L.Ed. 765 (1914), the Court said:

> Being a suit for damages, the proper remedy is an action at law, as was held below. [Citation omitted] It is said that the facts are complicated, but they are not so on the allegations of the bill, which merely discloses a series of acts alleged to have been parts of the plan to deceive; and further, mere complication of facts alone and difficulty of proof are not a basis of equity jurisdiction.

In this case, more is involved than simply complicated facts. The accounting and especially the engineering concepts are far beyond the experience and understanding of an ordinary jury.

Jury demands have been stricken in three recent cases. In *In re Boise Cascade Securities Litigation,* 420 F.Supp. 99, 104 (W.D. Wash. 1976), the court said:

> Central to the fairness which must attend the resolution of a civil action is an impartial and capable fact finder. A properly selected panel of veniremen must generally be presumed to yield an impartial and capable jury. However, at some point, it must be recognized that the com-

> plexity of a case may exceed the ability of a jury to decide the facts in an informed and capable manner. When that occurs, the question arises as to whether the right and necessity of fairness is defeated by relegating fact finding to a body not qualified to determine the facts. The third part of the analysis in footnote 10 to the majority opinion in *Ross v. Bernard* [*Bernhard*], *supra,* recognizes this.

An additional problem the court foresaw was that "any jury chosen to hear this case will not be a fair cross section of the community at large because of the estimated trial time of four to six months." *Id.*

In *In re United States Financial Securities Litigation,* 75 F.R.D. 702, 710 (S.D. Cal. 1977), the court said:

> The basis for granting equity jurisdiction over cases of extraordinary complexity is, of course, the inadequacy of the legal remedy, or more specifically, the inadequacy of the jury to handle the case and render a fair decision, as the Court noted in *Dairy Queen.* Recently the Court had occasion to formulate a test which is to be used in deciding whether a case is legal or equitable in nature. One part of the test is whether a jury is capable of rendering such a decision; if it is not then the case should be tried in equity by the court without a jury.

The court listed three guidelines for deciding whether a particular case is so complex that equity jurisdiction will attach and permit the case to be tried without a jury:

> First, although mere complexity is not enough, complicated accounting problems are not generally amenable to jury resolution. Although such problems often arise only during the damages portion of a trial, they sometimes are present during the liability portion as well. . . .
>
> Second, the jury members must be capable of understanding and of dealing rationally with the issues of the case.

> And third, an unusually long trial may make extraordinary demands upon a jury which would make it difficult for the jurors to function effectively throughout the trial.
>
> *Id.* at 711.

When these criteria, and especially the second, are applied to the facts of this case, they clearly favor a court trial.

Finally, in *Bernstein v. Universal Pictures, Inc., supra,* at 70, the court said:

> Assuming a minimum length for a trial in this case of four (4) months, an estimate which I now consider low, it would be impossible to empanel a representative jury in this case, whose verdict would enjoy the appearance of fairness.
>
> In addition, the sheer size of the litigation and the complexity of the relationships among the parties render it *as a whole* beyond the ability and competence of any jury to understand and decide with rationality. Of course, antitrust cases in general are by their very nature complex, so that special rules have been developed in response to their complexity. [Citation omitted] The ordinary antitrust case is clearly within the competence of juries. This lawsuit is the exception case, not the rule. [Emphasis by the court]

These comments, made in the context of an antitrust case, are equally applicable here.

[23] The teaching of these three cases is that where the issues in a case are beyond "the practical abilities and limitations of a jury," the legal remedy is inadequate and equity jurisdiction will attach. The court concludes that such a situation exists in the present case, and that the posture of this case poses a different problem than confronted the courts in ***Boise Cascade, United States Financial,*** and ***Berstein*** [sic] ***v. Universal Pictures.***

In those cases, the decision to strike the jury was made before trial. While the courts were able to draw upon their experience as trial courts in evaluating the complexity of the cases and the nature of the issues involved, their conclusions were inescapably somewhat speculative. Here, on the contrary, the court is able to base its decision on its own observations during the five month trial. The jurors were conscientious and diligent, but their past experience had not prepared them to decide a case involving technical and financial questions of the highest order.

Throughout the trial, the court felt that the jury was having trouble grasping the concepts that were being discussed by the expert witnesses, most of whom had doctorate degrees in their specialties. This perception was confirmed when the court questioned the jurors during the course of their deliberations and after they were discharged. When asked by the court whether a case of this type should be tried to a jury, the foreman of the jury said, "If you can find a jury that's both a computer technician, a lawyer, an economist, knows all about that stuff, yes, I think you could have a qualified jury, but we don't know anything about that." (Tr. 19,548). Several of the other jurors indicated that they thought that the major stumbling block was the requirement that the verdict be unanimous. When they were questioned after the trial, most of the jurors indicated that they thought a complex antitrust case like this one should be tried to the court.

The parties initially estimated that the trial of this case would last ten months. Because the hardship that such a long trial would impose on the jurors was obvious, a special pool of 175 prospective jurors was called in for this case. After excuses, there were only 29 candidates remaining from which to select 14 jurors. The 11 jurors to whom this case was submitted probably represented a random cross-section of people in the community who could afford to spend 10 months serving on a jury, but it is open to question whether they were a true cross-

section of the community. The six men and five women on the jury ranged in age from 32 years to 65 years, with the majority over 50. Several of the jurors were housewives, one was retired, and those who were employed worked at jobs where they could be replaced, but where neither their jobs nor their incomes were in jeopardy. Only one of the jurors had even limited technical education. While the court was appreciative of the effort they put into deciding the case, it is understandable that people with such backgrounds would have trouble applying concepts like cross-elasticity of supply and demand, market share and market power, reverse engineering, product interface manipulation, discriminatory pricing, barriers to entry, exclusionary leasing, entrepreneurial subsidiaries, subordinated debentures, stock options, modeling, and etc.

An additional consideration which the court feels warrants discussion is the burden that cases of this type impose upon the judicial system. The trial of this case occupied the time of the court and its staff almost exclusively for seven months. Because of the estimated length of the trial, the court went off the new case assignment wheel for its duration, thereby increasing the work load of the other courts and personnel of the Northern District. In addition, the jury expenses (borne by the government in this case) amounted to more than $32,000. All of this time and expense went for naught when the court was forced to declare a mistrial.

[**24**] When a trial is by jury rather than to the court, there is the possibility that no decision will be made. In this case, a second trial by jury could very easily suffer the same fate as the first because the composition of the jury will not change significantly. While there may be a right to a jury trial in every case, the court feels that where the cost to both the litigants and the government of such a trial is as great as it was in this case, and where the case is as technically and financially complex as this one is, the right should be limited to one jury trial.

As heretofore stated, the court has reviewed those cases in which a jury demand has been stricken. In all previous instances this was done before trial. It may be that through the use of good pretrial procedures, the complexity of a case (both in law and fact) can become known. However, in the instant case the court has listened to all the evidence and argument, and reviewed the law, and it is after the fact (i. e. trial) that the court has come to the conclusion that in the event of a retrial of this case it would not serve the ends of justice that the final outcome be determined by a lay jury verdict. Even if one does not want to eliminate jury trials completely in complex antitrust cases, then surely if the first trial results in a mistrial, the system and probably the parties themselves, are better served if the decision is ultimately made by the court, with the right of the parties to supplement the record.

For the reasons indicated above, the court hereby finds that the magnitude and complexity of the present lawsuit render it, as a whole, beyond the ability and competency of any jury to understand and decide rationally, and orders, in the event of a remand for retrial, that Memorex's jury demand be stricken. The jury was originally conceived as a protective shield between the litigants and the danger of an arbitrary decision by the sovereign. It would be a subversion of this ideal to insist upon submitting a case to a jury when there is a substantial risk that its decision will be arbitrary.

CALIFORNIA COMPUTER PRODUCTS, INC.
and Century Data Systems, Inc.,
Plaintiffs-Appellants,
v.
INTERNATIONAL BUSINESS MACHINES CORPORATION,
Defendant-Appellee.

No. 77-1563.

United States Court of Appeals, Ninth Circuit.

June 21, 1979.

Rehearing Denied Nov. 16, 1979.

Manufacturer of computer disks and other peripheral equipment brought antitrust action against computer manufacturer. The United States District Court for the Central District Court for the Central District of California, Ray McNichols, Chief Judge, directed verdict in favor of computer manufacturer and plaintiff manufacturer appealed. The Court of Appeals, Choy, Circuit Judge, held that: (1) manufacturer of peripheral equipment compatible with that of the defendant did not have standing to maintain antitrust action based on injury to general purpose computer system's manufacturers or leasing companies; (2) computer manufacturer had the right to respond to lower prices of its competitors with reduced, but still substantially profitable, prices on its own products; (3) defendant manufacturer was entitled to maintain its dominant market position, which it had acquired as a result of a superior product; (4) where the opportunity exists to increase or protect market share profitably by offering equivalent or superior performance of the lower price, even a virtual monopolist may do so; (5) design changes made by manufacturer integrating its disk functions into the central processing unit was shown to be a cost saving step and not an impermissible attempt to monopolize.

Affirmed.

1. Monopolies 28(1.6)

Clayton Act confers standing to sue only upon those persons causally injured by antitrust violations. Clayton Act, § 4, 15 U.S.C.A. § 15.

2. Monopolies 28(7.1, 7.2, 7.5, 7.6)

In order to prevail in an antitrust claim, the plaintiff must prove not only injury causally connected to the asserted violation but also that the injury is of the type the antitrust laws were intended to prevent; plaintiff's burden of proving the former is satisfied by proof of some damage flowing from the antitrust violation; satisfying the latter burden is dependent upon a showing that the injury was caused by a reduction, rather than an increase, in competition flowing from the defendant's acts. Clayton Act, § 4, 15 U.S.C.A. § 15.

3. Monopolies 28(6.2)

In order to recover for an antitrust violation, plaintiffs must demonstrate that the defendant's conduct was intended to or did have some anticompetitive effect beyond his own loss of business or the market's loss of a competitor; it is not sufficient for an antitrust plaintiff to allege an indirect ripple effect. Clayton Act, § 4, 15 U.S.C.A. § 15.

4. Monopolies 28(1.6)

Antitrust plaintiff which did not include itself in the class of general purpose computer systems manufacturers or the class of leasing companies and which did not demonstrate any direct causal injury as a result of defendant's alleged anticompetitive tactics with respect to those two classes did not have standing to maintain that Clayton Act action for antitrust violations affecting the two classes. Clayton Act, § 4, 15 U.S.C.A. § 15.

5. Federal Civil Procedure 2142

Although the district court may direct a verdict either against the party who does not bear the burden of persuasion or the party who does bear that burden, the amount of evidence

required for a directed verdict differs; party seeking a directed verdict must bear a stronger showing of evidence if he bears the burden of persuasion.

6. Federal Civil Procedure 2152

In ruling on motion for directed verdict, district court must consider all the evidence, both favorable and unfavorable, but, in order to avoid passing on the credibility of witnesses in weighing contradictory evidence, the court must resolve all inferences in favor of the party with the burden of persuasion.

7. Federal Civil Procedure 2152

In order to benefit from the favorable inferences available in ruling on motion for a directed verdict, the party against whom the motion is made must present substantial evidence.

8. Federal Courts 764

Sole issue in an appeal from a directed verdict against the party with the burden of persuasion is the sufficiency of the evidence of the appellant's claim.

9. Federal Civil Procedure 2121, 2601
Federal Courts 764

Standard for determining the propriety of a directed verdict is identical to that for determining the propriety of a judgment n. o. v., and is the same for both district and appellate judges.

10. Monopolies 28(8)

Standard for determining whether to grant a directed verdict in an antitrust action is the same as in other actions.

11. Monopolies 28(2)

Essential elements to a successful claim under § 2 of the Sherman Act are possession of monopoly power in the relevant market, wilful acquisition or maintenance of that power, and

causal antitrust injury. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

12. Monopolies 12(1.3), 28(7.4)

"Monopoly power" is the power to control prices or exclude competition; that power can be demonstrated by evidence of the exercise of actual control over prices or exclusion of competitors. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

See publication Words and Phrases for other judicial constructions and definitions.

13. Monopolies 12(1.3, 1.5)

In order to show the wilful acquisition or maintenance of monopoly power, the conceded monopolist must have engaged in wilful acts directed at establishing or retaining its monopoly as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident; plaintiff need not show that the conceded monopolist's acts were of a kind that would be unlawful for an ordinary enterprise but rather must show that the monopolist's acts necessarily excluded competition from the relevant market; it is not necessary to show a specific intent to eliminate a competitor. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

14. Monopolies 12(1.2)

The acts of a defendant in a § 2 Sherman Act action are properly analyzed analogous to contract, combinations and conspiracies under § 1; test is whether the defendant's acts, otherwise lawful, were unreasonably restrictive of competition. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2.

15. Monopolies 12(1.1, 1.3)

Although acts of monopolization are frequently the end products of conduct which restrains trade, that is not always true as the prohibition on restraints of trade is limited to

concerted activity and contractual restraints while individual activity may also give rise to liability for monopolistic activity; conversely, not all restraints of trade constitute acts of monopolization as the monopoly must be acquired or maintained by means of a restraint of trade and not all such restraints have the requisite causal effect. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2.

16. Monopolies 12(1.3)

Four elements to a successful claim of attempt to monopolize are specific intent to control prices or destroy competition with respect to a part of commerce, predatory or anticompetitive conduct directed to accomplishing the unlawful purpose, a dangerous probability of success, and a causal anti-trust injury. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

17. Monopolies 17(1.8)

The intent to build a monopoly is logically synonymous with the intent to control prices or exclude competition in the relevant market. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

18. Monopolies 12(1.6)

Direct evidence of specific intent to control prices or destroy competition is not always necessary when the claim of attempt to monopolize is founded upon a substantial claim of restraint of trade; in those circumstances, the requisite specific intent may be inferred. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

19. Monopolies 28(7.1)

Market power is relevant to determining whether an inference of an attempt to monopolize is proper but where a restraint of trade violation clearly exists, proof of market power is unnecessary to support an inference of specific intent. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2.

20. Monopolies 12(1.3)

Market definition is necessary to establish an attempt to monopolize where specific intent is sought to be shown by an inference unless a per se restraint of trade is made out. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2.

21. Monopolies 12(1.10)

Even though the restraint of trade effected may be reasonable under § 1 of the Sherman Act, it may constitute an attempt to monopolize if a specific intent to monopolize can be shown. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2.

22. Monopolies 12(1.3, 1.10)

Since individual actions may constitute an attempt to monopolize, no contractual agreement is required but individual conduct is still measured against the same reasonableness standard governing concerted contractual activity in restraint of trade. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2.

23. Monopolies 12(1.3, 1.10)

Because monopoly power is a necessary element of the completed offense of monopolization but is not necessary for attempt, the same conduct may provide a basis for the monopolization offense and yet be excluded as a basis for the attempt offense as a defendant's monopoly power or lack thereof is part of the reasonableness calculus and conduct reasonable for other funds is not necessarily reasonable for the monopolist. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

24. Monopolies 28(7.5)

The specific intent on the part of an attempted monopolist to control prices or destroy competition may be shown to have a dangerous probability of success by either direct proof of market power or by inference from the proven specific intent itself; because the element may be inferred from the existence

of specific intent in a proper case, it is not an essential element of the attempt claim; neither is proof of any particular degree of market power necessarily an independent element of such a claim. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

25. Monopolies 28(8)

Even if the evidence were sufficient to go to the jury on the issue of whether alleged monopolist, prior to cutting prices on some of its products, offset losses on other products with monopolistic profits from its then high-priced equipment, directed verdict in favor of the defendant would still be required because of the lack of showing of any causal injury to the plaintiff as a result of the high prices. Clayton Act, § 4, 15 U.S.C.A. § 15.

26. Monopolies 28(7.5)

In the absence of any showing that computer manufacturer priced its disk products below marginal cost, there was no showing of predatory pricing as a means of obtaining or maintaining a monopoly. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

27. Monopolies 17(1.3)

Alleged monopolist had the right to respond to the lower prices of its competitors with reduced, but still subtantially profitable, prices on its own products. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

28. Monopolies 28(1.4)

Where plaintiff's price reductions resulted from competition by the alleged monopolist and where the alleged monopolist's stimulus to price competition was competition from the plaintiff and other of its competitors, the plaintiff's losses as a result of price reduction did not represent com-

pensable injury from the acts of the alleged monopolist unnecessarily excluding and restricting competition. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

29. Monopolies 12(1.3)

Where alleged monopolist's technical innovations resulted in growth as a consequence of a superior product, it was entitled to maintain its consequent dominant postion in the market which it had created through business acumen. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

30. Monopolies 12(1.3)

Sherman Act does not provide distinction between competition on the basis of price and of performance; the two are inseparable parts of any competitive offering and where the opportunity exists to increase or protect markets share profitably by offering equivalent or superior performance at a lower price, even a virtual monopolist may do so. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

31. Monopolies 17(1.3)

Price reductions up to the point of marginal cost are consistent with competition on the merits while a firm pricing below marginal cost by definition incurs efficiency so that competition on the basis of the efficiency in that situation is frustrated. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

32. Monopolies 12(1.3)

Assuming that manufacturer was a monopolist, it had the right to redesign his product to make them more attractive to buyers, whether by reason of lowering manufacturing costs and price or by improved performance. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

33. Monopolies 12(2)

Computer manufacturer was under no duty to help a competitor in the field of periphery equipment survive or expand and was not required to provide its competitor with its disk products in order to permit it to examine and copy them; nor was it required to constrict its product development so as to facilitate the sales of rival products. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

34. Monopolies 17(1.1)

Action of computer manufacturer in redesigning its products so as to integrate disk control function into the central processing unit as a cost saving step consistent with industry trends, thus enabling the manufacturer to reduce prices for equivalent functions, did not violate the Sherman Act. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

35. Monopolies 28(7.5)

In view of the fact that price cuts in disk equipment announced by manufacturer which allegedly facilitated price increases in its central processing units were themselves profitable and reasonable even for a monopolist, evidence did not show that computer manufacturer engaged in impermissible monopoly activity by raising the prices on its central processing units while lowering the prices on disk units with respect to which it was facing competition. Sherman Anti-Trust Act, § 2, 15 U.S.C.A. § 2.

36. Federal Civil Procedure 2142

The complexity of a plaintiff's case does not entitle it to avoid a directed verdict if the evidence, no matter how much of it there may be, is weak.

37. Monopolies 28(1.4)

There could be no synergistic monopolistic result from a number of acts, none of which showed causal antitrust injury to the plaintiff. Clayton Act, § 4, 15 U.S.C.A. § 15.

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Appeal from the United States District Court for the Central District of California.

Before CHOY and KENNEDY, Circuit Judges, and PALMIERI,* District Judge.

CHOY, Circuit Judge:

California Computer Products, Inc. ("CalComp") appeals from the judgment entered on a directed verdict in favor of appellee International Business Machines Corp. ("IBM") as to all counts of its complaint charging IBM with violations of § 2 of the Sherman Act, 15 U.S.C. § 2. We affirm.

1. *Background and Proceedings Below*

IBM is one of the largest industrial corporations in the world. It achieved technical leadership in the computer industry over other early entrants, such as Sperry Rand, in the mid-1950's and thereafter pioneered, the development of many electronic data processing products, including the disk products involved in this litigation.

Disk products are part of a broader cetegory of what is known as peripheral equipment, such as disks, tapes, printers, and terminals, which is connected to the central processing unit ("CPU") to enable the data processing system to perform particular functions. Included in the reference to disk products are disk drives, devices using magnetic disks similar in appearance to phonograph records to store information, and con-

* The Honorable Edmund L. Palmieri, Senior United States District Judge for the Southern District of New York, sitting by designation.

trollers, used for communication between disk drives and the CPU. Occasionally these devices are built into the CPU; alternatively, they exist as external components that may be "plugged into" the CPU. As a general purpose computer systems manufacturer, IBM sells both CPU's and peripherals, including disk products.

CalComp began manufacturing computer products in 1960, when it made plotting devices—peripheral equipment that provides graphic, printed or pictorial output. CalComp claims no injury with respect to these products. With the acquisition of Century Data Systems in 1969, CalComp entered the disk products market, manufacturing disk drives and controllers that were "plug compatible" with IBM's and other suppliers' CPUs. CalComp's business strategy with respect to IBM-compatible disk products was straightforward: copy and, where possible, improve upon an IBM design, and undersell IBM to its own customers. By the "reverse engineering" of simply buying a device from IBM, taking it apart, and building a similar one, CalComp was able to avoid IBM's expenditures for research and development and pass the savings on through lower prices.

CalComp commenced this lawsuit on October 3, 1973. The complaint alleged that IBM's introduction of new CPU's and disk products, its price cuts on existing disk products, its leasing policies, and other marketing practices prevented CalComp from effectively competing with IBM for disk product sales and thus violated § 1 and § 2 of the Sherman Act.[1] CalComp alleged and attempted to prove that these acts by IBM took place within a ten year span, from late 1963 to 1972, resulting in treble damages of $306 million. Following over three years of discovery and pretrial, trial to a jury began on November 15, 1976. At the conclusion of fifty-four days of trial covering three months, the district court granted IBM's motion for directed verdict on February 11, 1977.

The records and transcript on this appeal comprise 132 volumes. Voluminous briefs and supplemental briefs by the parties and *amicus* briefs were permitted. We have considered

[1] CalComp has dropped its § 1 claim on this appeal.

all of the arguments advanced and scrutinized pertinent parts of the record, particularly in view of the nature of the appellate task on review of a directed verdict.

II. *Antitrust Standing*

CalComp has asserted that IBM's actions created anticompetitive effects on three classes of IBM competitors: (1) general purpose computer systems manufacturers, (2) leasing companies and (3) IBM-compatible peripheral equipment manufacturers. We believe that CalComp, an IBM-compatible peripheral equipment manufacturer, lacks antitrust standing as to the first two categories of claims.

[1-3] Section 4 of the Clayton Act, 15 U.S.C. § 15, authorizing private antitrust suits for damages, provides in part:

> Any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue therefor . . . .

This statute confers standing to sue only upon those persons causally injured by antitrust violations. *Kapp v. National Football League,* 586 F.2d 644, 648-49 (9th Cir. 1978); *John Lenore & Co. v. Olympia Brewing Co.,* 550 F.2d 495, 498-99 (9th Cir. 1977). Moreover, in order to prevail the plaintiff must prove not only injury causally linked to the asserted violation, but also that the injury is of the type the antitrust laws were intended to prevent. *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.,* 429 U.S. 477, 489, 97 S.Ct. 690, 50 L.Ed.2d 701 (1977); *John Lenore & Co. v. Olympia Brewing Co.,* 550 F.2d at 498-99; *In re Multidistrict Vehicle Air Pollution M.D.L. No. 31,* 481 F.2d 122, 125 (9th Cir. 1973), *cert. denied,* 414 U.S. 1045, 94 S.Ct. 551, 38 L.Ed.2d 336 (1975). The plaintiff's burden of proving the former is satisfied by proof of *some* damage flowing from the antitrust violation. *Zenith Radio Corp. v. Hazeltine Research Inc.,* 395 U.S. 100, 114 n.9, 89 S.Ct. 1562, 23 L.Ed.2d 129 (1969). Satisfying the latter burden is dependent on a showing that the injury was caused by a reduction, rather than an increase, in competition flowing from the defendant's acts, since "[t]he antitrust laws . . . were enacted for 'the protection of *competition* not *competitors,*'" *Brunswick Corp. v. Pueblo*

Bowl-O-Mat, Inc., 429 U.S. at 488, 97 S.Ct. at 697, *quoting Brown Shoe Co. v. United States*, 370 U.S. 294, 320, 82 S.Ct. 1502, 8 L.Ed.2d 510 (1962). *See Oreck Corp. v. Whirlpool Corp.*, 579 F.2d 126, 133 (2d Cir. 1978). Accordingly, the plaintiff must demonstrate that the defendant's conduct was intended to or did have some anticompetitve effect beyond his own loss of business or the market's loss of a competitor. *See Knutson v. Daily Review, Inc.*, 548 F.2d 795, 803 (9th Cir. 1976). Moreover, it is not sufficient for an antitrust plaintiff to allege an indirect ripple effect. As this court wrote in *John Lenore & Co.*:

> It is not enough to confer standing that plaintiff just prove some injury and show that this injury is within the affected area of the economy. Antitrust violations admittedly create many foreseeable ripples of injury to individuals, but the law has not allowed all of those merely affected by the ripples to sue for treble damages.

550 F.2d at 499.

[4] In the present case CalComp has alleged that IBM's actions injured general purpose computer systems manufacturers and leasing companies. But CalComp does not include itself among these two classes of IBM competitors. Nor does CalComp's evidence demonstrate a direct causal injury which would afford it standing. Rather, at best CalComp argues that injury to these two groups has had an indirect ripple effect upon it. As *John Lenore & Co.* indicates, such an indirect ripple effect is not sufficient to allow CalComp to sue for treble damages on its first two categories of claims.

III. *CalComp's Claims as to IBM-Compatible Peripheral Equipment Manufacturers*

A. *Standard of Review on Appeal from Directed Verdict*

[5, 6] As a general rule, the district court has the power to direct a verdict if "the evidence permits only one reasonable conclusion as to the verdict." *Fountila v. Carter*, 571 F.2d 487, 489-90 (9th Cir. 1978), *quoting Kay v. Cessna Aircraft Co.*, 548

F.2d 1370, 1372 (9th Cir. 1977); *see Syufy Enterprises v. National General Theatres,* 575 F.2d 233, 235 (9th Cir. 1978).[2] The district court must consider all the evidence—both favorable and unfavorable. But in order to avoid passing on the credibility of witnesses and weighing contradictory evidence, the court must resolve all inferences in favor of the party with the burden of persuasion, because

> [i]t is the jury, not the judge, which "weighs the contradictory evidence and inferences, judges the credibility of witnesses, . . . and draws the ultimate conclusion as to the facts . . . ."

Fount-Wip, Inc. v. Reddi-Wip, Inc., 568 F.2d 1296, 1301 (9th Cir. 1978), *quoting Cockrum v. Whitney,* 479 F.2d 84, 86 (9th Cir. 1973) and *Tennant v. Peoria & Pekin Union Ry.,* 321 U.S. 29, 35, 64 S.Ct. 409, 88 L.Ed. 520 (1944); *see Marquis v. Chrysler Corp.,* 577 F.2d 624, 639 (9th Cir. 1978); *Kay v. Cessna Aircraft Co.,* 548 F.2d at 1372.[3]

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[2] Although the district court may direct a verdict either against the party who does not bear the burden of persuasion or the party who does bear that burden, the amount of evidence required for a directed verdict differs. The party seeking a directed verdict must make a stronger showing of evidence if he bears the burden of persuasion. *See United California Bank v. THC Financial Corp.,* 557 F.2d 1351, 1356 (9th Cir. 1977); *Juhnke v. EIG Corp.,* 444 F.2d 1323, 1325 (9th Cir. 1971); Comment, "Directing the Verdict in Favor of the Party with the Burden of Proof," 50 N.C.L.Rev. 843 (1972). Thus directed verdicts for defendants are more frequent than for plaintiffs. *See* C. Wright, Federal Courts 464 (3d ed. 1976).

[3] This test is a hybrid of the so-called "new trial" and "most favorable evidence" tests. Shortly after the power of the federal courts to grant directed verdicts consistently with the seventh amendment was established in *Galloway v. United States,* 319 U.S. 372, 63 S.Ct. 1077, 87 L.Ed. 1458 (1943), two polar tests were proposed for determining whether the evidence in a particular case is sufficient to warrant a directed verdict against the bearer of the persuasion burden. The first, the "setting aside" or "new trial" test, permitted a directed verdict against the party with the burden of persuasion if the judge, looking at *all* the evidence, both favorable and unfavorable, determined that he would be duty bound to set aside a verdict for that party. In the second, the "most favorable evidence" test, the court was to consider only the evidence favorable to the party with the persuasion burden, completely disregarding all unfavorable evidence, and determine whether a reasonable jury, viewing the evidence in the light most favorable to that party,

(Footnote continued on following page)

Thus, this court in *Maheu v. Hughes Tool Co.*, 569 F.2d 459, 464 (9th Cir. 1977), upholding the denial of a directed verdict against the party with the burden of persuasion, made it clear that application of the general standard of *Fountila* and *Kay, supra,* required it to view the evidence "in the light most favorable to the party opposing the motion," and that it "must examine *all* the evidence" (emphasis added). *See also id.* at 481 (concurring and dissenting opinion); *Wescott v. Impresas Armadoras, S.A.*, 564 F.2d 875, 882 (9th Cir. 1977); *Santa Clara Valley Distributing Co. v. Pabst Brewing Co.*, 556 F.2d 942, 944 (9th Cir. 1977); *Kay v. Cessna Aircraft Co.*, 548 F.2d at 1372; *Chisholm Brothers Farm Equipment Co. v. International Harvester Co.*, 498 F.2d 1137, 1140 (9th Cir.), *cert. denied,* 419 U.S. 1023, 95 S.Ct. 500, 42 L.Ed.2d 298 (1974).

[7, 8] In order to benefit from the favorable inferences available under this standard, the party against whom the motion is made must present "substantial evidence." As stated in *Rutledge v. Electric Hose & Rubber Co.*, 511 F.2d 668 (9th Cir. 1975);

> In considering a motion for a directed verdict, the court must give the party against whom the motion is made the benefit of all reasonable evidentiary inferences. [Cited authority omitted.] This is no less true in an antitrust case. *However, if there is no substantial evidence to support the claim, the court must direct a verdict.*

Id. at 677 (emphasis added), *Quoting Cleary v. National Distillers & Chemical Corp.*, 505 F.2d 695, 696 (9th Cir. 1974). The "sole issue" in an appeal from a directed verdict against the party with the burden of persuasion is thus the sufficiency of the evidence of the appellant's claim. *Cleary v. National*

(Footnote continued from previous page)

could find every essential part in that party's favor. If it could not, a directed verdict for the other party would be proper. *See* McBaine, "Trial Practice: Directed Verdicts; Federal Rule," 31 Calif.L.Rev. 454, 460-61 (1943). The principal differences between these polar tests were that the "setting aside" test involved passing upon the credibility of witnesses and weighing contradictory evidence, while the "most favorable evidence" test did not; and the former test permitted consideration of all the evidence, while the latter did not.

Distillers & Chemical Corp., 505 F.2d at 696. As stated in *Chisholm Brothers Farm Equipment Co. v. International Harvester Co.*, 498 F.2d at 1140, "the correct standard is whether or not, viewing the evidence as a whole, there is substantial evidence present that could support a finding . . . for the nonmoving party." *Accord, Janich Bros., Inc. v. American Distilling Co.*, 570 F.2d 848, 853 & n.2 (9th Cir. 1977) (substantial evidence is "more than a mere scintilla" and consists of "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion"), *cert. denied*, 439 U.S. 829, 99 S.Ct. 103, 58 L.Ed.2d 122 (1978).

[9] The standard for determining the propriety of a directed verdict—identical to that for determining the propriety of a judgment n. o. v., *Fountila v. Carter*, 571 F.2d at 489; *Cockrum v. Whitney*, 479 F.2d at 85—is the same for district and appellate judges. *Maheu v. Hughes Tool Co.*, 569 F.2d at 481 (concurring and dissenting opinion).

[10] In its *amicus* brief the Department of Justice argues that:

> Because of the generally complex nature of antitrust litigation and the important role which motive and intent often play therein, the Supreme Court has generally disapproved of the use of summary procedures, such as motions for directed verdicts, in antitrust cases. *Poller v. Columbia Broadcasting*, 368 U.S. 464, 473 [, 82 S.Ct. 486, 7 L.Ed. 2d 458] (1962); *Hospital Bldg. Co. v. Rex Hospital Trustees*, 425 U.S. 738, 746 [, 96 S.Ct. 1848, 48 L.Ed.2d 338] (1976); *see also Chisholm Bros. Farm Equip. Co. v. International Harvester Co., supra*, 498 F.2d at 1139. Complex Section 2 cases, such as this case, involve numerous factual issues such as market definition, whether the defendant possesses monopoly power in a relevant market and whether the defendant had the purpose or intent to exercise that monopoly power. These issues must be resolved by the jury after receiving appropriate instructions from the court.

However, in *Santa Clara Valley Distributing Co. v. Pabst Brewing Co.*, 556 F.2d at 944-45 n.1, this court dealt extensively and definitively with the meaning of *Poller* and *Hospital Building Co.* in the context of a directed antitrust verdict. That case, emphasizing that the Supreme Court's disapproval of "summary proceedings" dealt with *"pre* trial motions" (emphasis original), concluded that "the same circumspection is not required in the case of directed verdicts." Rather, the usual standard described above applies:

> a directed verdict is proper, even in an antitrust case, when "there is no substantial evidence to support the claim."

Id., quoting Rutledge v. Electric Hose & Rubber Co., 511 F.2d at 677, and *Cleary v. National Distillers & Chemical Corp.*, 505 F.2d at 696. *See Marquis v. Chrysler Corp.*, 577 F.2d at 639 & n.25.[4]

B. *General § 2 Doctrine*

CalComp contends that the evidence was sufficient to show that particular conduct on the part of IBM, detailed below, violated either or both the monopolization and attempt to monopolize clauses of § 2 of the Sherman Act.[5] In order to reverse the district court's judgment as to either of these claims,

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[4] That directed verdicts in antitrust cases have not been "generally disapproved" is evident from the fact that *Santa Clara Valley*, like *Syufy, Janich Brothers, Cleary* and *Chisholm Brothers*, affirmed a directed verdict in favor of the antitrust defendant. In addition, *see Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1357-59 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074, 97 S.Ct. 813, 50 L.Ed.2d 792 (1977); *Peltier v. Exxon Corp.*, 527 F.2d 757, 759 (9th Cir. 1975); *Hallmark Industry v. Reynolds Metals Co.*, 489 F.2d 8, 11-13 (9th Cir. 1973), *cert. denied*, 417 U.S. 932, 94 S.Ct. 2643, 41 L.Ed.2d 235 (1974). As the Supreme Court has noted, "[t]he same rule" generally applicable in civil cases "governs in ruling upon motions for directed verdict in treble damage suits under the antitrust laws." *Continental Ore Co. v. Union Carbide & Carbon Corp.*, 370 U.S. 690, 696 n.6, 82 S.Ct. 1404, 1409 n.6, 8 L.Ed.2d 777 (1962).

[5] Sherman Act § 2, 15 U.S.C. § 2, provides:

> Every person who shall monopolize, or attempt to monopolize . . . any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony. . . .

it must be that after viewing the evidence in the light most favorable to CalComp, there is substantial evidence of every essential element of that claim.

1. *Monopolization*

[11] There are three essential elements to a successful claim of § 2 monopolization:

(a) the possession of monopoly power in the relevant market;

(b) the willful acquisition or maintenance of that power; and

(c) causal "antitrust" injury.

The first two elements are derived from § 2 itself, and were explicated in *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71, 86 S.Ct. 1698, 16 L.Ed.2d 778 (1966). *See Greyhound Computer Corp. v. IBM*, 559 F.2d 488, 492 (9th Cir. 1977); *Moore v. Jas. H. Matthews & Co.*, 550 F.2d 1207, 1218 (9th Cir. 1977).

[12] As reiterated in *Greyhound*, monopoly power—the first element—"is the power to control prices or exclude competition." 559 F.2d at 496, *quoting United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 391, 76 S.Ct. 994, 100 L.Ed. 1264 (1956). The *du Pont* definition of monopoly power has been applied principally with reference to the defendant's share of the relevant product and geographic markets. *Greyhound*, 559 F.2d at 496. *See United States v. Grinnell Corp.*, 384 U.S. at 571, 86 S.Ct. 1698; *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. at 399, 404, 76 S.Ct. 994; *American Tobacco Co. v. United States*, 328 U.S. 781, 797, 66 S.Ct. 1125, 90 L.Ed. 1575 (1946); *Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 512 F.2d 1264, 1274 (9th Cir. 1975). *But see Moore v. Jas. H. Matthews & Co.*, 550 F.2d at 1219 ("the requisite power also can be demonstrated by evidence of the exercise of actual control over prices or exclusion of competitors").

[13-15] The second element of a successful monopolization claim requires that the conceded monopolist have engaged in "willful" acts directed at establishing or retaining its monopoly, "as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." *United States v. Grinnell Corp.*, 384 U.S. at 571, 86 S.Ct. at 1704[6]. That case found that defendant's acts sufficient to meet the § 2 conduct requirement because they constituted "unlawful and exclusionary practices." *Id.* at 576, 86 S.Ct. 1698.

The plaintiff need not show that the conceded monopolist's acts were of a kind that would be unlawful for an ordinary enterprise. *Greyhound Computer Corp. v. IBM*, 559 F.2d at 498. Rather, the plaintiff must show that the defendant's acts "unnecessarily excluded competition" from the relevant market. *Id.* Nor is it necessary to show a specific intent to eliminate a competitor. *Sunkist Growers, Inc. v. Winckler & Smith Citrus Products Co.*, 284 F.2d 1, 26 (9th Cir. 1960), *modified*, 289 F.2d 933 (1961), *rev'd on other grounds*, 370 U.S. 19, 82 S.Ct. 1130, 8 L.Ed.2d 305 (1962). The defendant's acts are properly analyzed analogously to contracts, combinations and conspiracies under § 1 of the Sherman Act: the test is whether the defendant's acts, otherwise lawful, were *unreasonably* restrictive of competition.[7] *See Gough v. Rossmoor Corp.*, 487 F.2d 373,

[6] "The Act was deemed by its sponsors not to be applicable to one 'who merely by superior skill and intelligence . . . got the whole business because nobody could do it as well.' [T]he exception was an indication that power obtained or maintained by the kind of behavior that competition is thought to foster, if not compel, was immune even though businesses and business opportunities were destroyed in the process. In short, . . . protection of incentives to competitive behavior would prevail over dispersion of market power." C. Kaysen & D. Turner, Antitrust Policy 20 (1959), *quoting* 21 Cong.Rec. 3151-52 (1890) (remarks of Sen. Hoar).

[7] Thus, appellant's contention that "*any* act taken by the monopolist satisfies the literal 'monopolizes' language of the statute" is overly broad. *See Sunkist Growers, Inc. v. Winckler & Smith Citrus Products Co.*, 284 F.2d at 23 (after noting that jury instruction susceptible of similar interpretation was overly broad since under it, it was "difficult . . . to see how a monopolist can make any business decision . . . nor how it can make any sale or purchase (for example) at an advantageous price," court held its use not reversible error in view of other instructions which "modified and tempered its broadness").

376 (9th Cir. 1973).[8] While this "in large measure" has the effect of making acts of monopolization "merely the end products of conduct which violates § 1," "that is not always true." *United States v. Griffith,* 334 U.S. 100, 106, 68 S.Ct. 941, 92 L.Ed. 1236 (1948). Section 1 is limited to concerted activity and contractual restraints, while under § 2, individual activity may also give rise to liability. *See Moore v. Jas. H. Matthews & Co.,* 473 F.2d at 332-33.[9]

The third element—plaintiff's resultant "antitrust" injury—has already been discussed, Part II *supra.*

2. *Attempt to Monopolize*

[**16**] There are four elements to a successful claim of § 2 attempt to monopolize:

(a) specific intent to control prices or destroy competition with respect to a part of commerce;

(b) predatory or anticompetitive conduct directed to accomplishing the unlawful purpose;

(c) a dangerous probability of success; and

(d) causal "antitrust" injury.

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[8] *Rossmoor* involved claims under § 1 and both the monopolization and attempt to monopolize clauses of § 2. 487 F.2d at 376. We held that whether the conduct requirement of each of these statutory proscriptions was met depended, under all three clauses, on the effect on "commercial competition: whether the defendants conduct . . . unreasonably restrains competition in the market place." *Id. See also FTC v. Motion Picture Advertising Service Co.,* 344 U.S. 392, 397, 73 S.Ct. 361, 365, 97 L.Ed. 426 (1953) ("when the Sherman Act is involved the crucial fact is the impact of the particular practice on competition"); *Appalachian Coals, Inc. v. United States,* 288 U.S. 344, 360, 53 S.Ct. 471, 77 L.Ed. 825 (1933) (both § 1 and § 2 "set up the essential standard of reasonableness").

[9] Conversely, not all violations of the § 1 constitute acts of monopolization under § 2. The monopoly must be "acquired or maintained . . . *by means of*" the § 1 violation, *United States v. Griffith,* 334 U.S. 100, 106, 68 S.Ct. 941, 92 L.Ed. 1236 (1948) (emphasis added), "and not all violations of § 1 have the requisite causal effect." 3 P. Areeda & D. Turner, Antitrust Law ¶ 626, at 81 (1978).

[17-20] The first element was explained in *Times Picayune Publishing Co. v. United States,* 345 U.S. 594, 626, 73 S.Ct. 872, 97 L.Ed. 1277 (1953), wherein the Supreme Court differentiated the requisite levels of intent under the monopolization and attempt to monopolize clauses of the Sherman Act:

> While the completed offense of monopolization under § 2 demands only a general intent to do the act . . . a specific intent to destroy competition or build monopoly is essential to guilt for the mere attempt . . ..

The intent to "build monopoly," given the *du Pont* definition of monopoly power, is logically synonymous with the intent to control prices or exclude competition in the relevant market. *See Gough v. Rossmoor Corp.,* 585 F.2d 381, 390 (9th Cir. 1978); *Marquis v. Chrysler Corp.,* 577 F.2d 624, 641 (9th Cir. 1978); *Janich Bros., Inc. v. American Distilling Co.,* 570 F.2d 848, 853 (9th Cir. 1977), *cert. denied,* 439 U.S. 829, 99 S.Ct. 103, 58 L.Ed.2d 122 (1978); *Greyhound Computer Corp. v. IBM Corp.,* 559 F.2d at 504; *Knutson v. Daily Review, Inc.,* 548 F.2d at 813-14; *Lessig V. Tidewater Oil Co.,* 327 F.2d 459, 474 (9th Cir.), *cert. denied,* 377 U.S. 993, 84 S.Ct. 1920, 12 L.Ed.2d 1046 (1964). "Direct evidence" of specific intent to control prices or destroy competition, however, is not always necessary when the attempt claim is "founded upon a substantial claim of restraint of trade"—i.e., a § 1 violation. In these circumstances the requisite specific intent may be inferred. *Trixler Brokerage Co. v. Ralston Purina Co.,* 505 F.2d 1045, 1051-52 (9th Cir. 1974); *see Gough v. Rossmoor Corp.,* 585 F.2d at 390; *Janich Bros., Inc. v. American Distilling Co.,* 570 F.2d at 854; *Knutson v. Daily Review, Inc.,* 548 F.2d at 814; *Bushie v. Stenocord Corp.,* 460 F.2d 116, 120-21 (9th Cir. 1972). Market power is relevant to determining whether such an inference is proper; but where a § 1 violation "clearly" exists, proof of market power is unnecessary to support an inference of specific intent.[10]

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[10] Since "under the rule of reason market definition is required to establish a § 1 violation," such evidence is necessary where specific intent is sought to be shown by inference unless a *per se* violation of § 1 is made out. *Gough v. Rossmoor Corp.,* 585 F.2d at 390; *see Chisholm Brothers Farm Equipment Co. v. International Harvester Co.,* 498 F.2d 1137, 1140 (9th Cir.), *cert. denied,* 419 U.S. 1023, 95 S.Ct. 500, 42 L.Ed.2d 298 (1974).

Janich Bros., Inc. v. American Distilling Co., 570 F.2d 854 n.4; *Hallmark Industry v. Reynolds Metals Co.*, 489 F.2d 8, 12-13 (9th Cir. 1973), *cert. denied*, 417 U.S. 932, 94 S.Ct. 2643, 41 L.Ed.2d 235 (1974).

[21] Conversely, "even though the restraint effected may be reasonable under § 1, it may constitute an attempt to monopolize forbidden by § 2 if a specific intent to monopolize may be shown." *United States v. Columbia Steel Co.*, 334 U.S. 495, 531-32, 68 S.Ct. 1107, 1126, 92 L.Ed. 1533 (1948). However, "[o]rdinary specific intent is difficult to prove," *Hallmark Industry v. Reynolds Metals Co.*, 489 F.2d at 12; *see e.g., United States v. Columbia Steel Co.*, 334 U.S. at 532-34, 68 S.Ct. 1107, and thus more commonly it is shown indirectly by proof of illegal conduct and, where necessary, market power.

[22, 23] The "predatory or anticompetitive conduct" element of § 2 attempt, like the conduct element of monopolization, encompasses more than violations of § 1. *See, e. g., Knutson v. Daily Review, Inc.*, 548 F.2d at 814 (attempt requires proof of "some illegal [under Section 1] *or* predatory activity") (emphasis added). The reason for this was stated in *Moore v. Jas. H. Matthews & Co.*, 473 F.2d at 332:

> [S]ection 2 is not limited to concerted activity. A jury, therefore, could find that individual actions . . . constituted monopolization or attempted monopolization violating section 2, even if it found no concerted activity.

Additionally, "[s]ection 1 also prohibits 'contracts' that restrain trade," *id.* at 333, and since individual actions may violate § 2, no contractual agreement is required. Nonetheless, under § 2 attempt—as with § 1 monopolization—individual conduct is measured against the same "reasonableness" standard governing concerted and contractual activity under § 1. *See* note 7 *infra; Greyhound Computer Corp. v. IBM Corp.*, 559 F.2d at 505 n.37 ("§ 2 was intended to prohibit *unreasonable* restraints of

trade that exclude competition even when they are imposed by a single trader") (emphasis added).[11]

[24] The third element of § 2 attempt, the requirement that a defendant's demonstrated specific intent to control prices or destroy competition have a "dangerous probability of success," may be satisfied either by direct proof of market power, *see Janich Bros., Inc. v. American Distilling Co.*, 570 F.2d at 853, or by inference from the proven specific intent itself, *see Greyhound Computer Corp., v. IBM Corp.*, 559 F.2d at 504. Because this element may be inferred from the existence of a specific intent in proper cases, it is not an "essential" element of an attempt claim, *Lessig v. Tidewater Oil Co.*, 327 F.2d at 474. For the same reason, neither is proof of any particular degree of market power necessarily an "independent" element of such a claim. *Hallmark Industry v. Reynolds Metals Co.*, 489 F.2d at 12 n.3.[12]

In addition to the first three elements necessary to establish a prima facie case of attempt, the fourth element—causal "antitrust" injury—is as necessary to confer standing to sue and to support a claim for damages under § 2 attempt as it is under § 2 monopolization. 15 U.S.C. § 15; *see Greyhound Computer Corp. v. IBM Corp.*, 559 F.2d at 505 & n.38; Part II *supra*.

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[11] *See generally Janich Bros., Inc. v. American Distilling Co.*, 570 F.2d at 854-58; *Greyhound Computer Corp. v. IBM Corp.*, 559 F.2d at 505; *Chisholm Brothers Farm Equipment Co. v. International Harvester Co.*, 498 F.2d at 1145. Because monopoly power is a necessary element of the completed offense of § 2 monopolization but is not necessary for attempt, it follows that the same conduct may provide a basis for the monopolization offense and yet be excluded as a basis for the attempt offense. This is so since a defendant's monopoly power—or lack thereof—is part of the "reasonableness" calculus; conduct reasonable for other firms is not necessarily reasonable for the monopolist.

[12] Of course, proof of market power may be necessary to establish specific intent. *See* note 10 *supra; Janich Bros., Inc. v. American Distilling Co.*, 570 F.2d at 854 n.4.

C. *CalComp's Evidence*

The foregoing analysis of the elements of § 2 monopolization and attempt to monopolize demonstrates that if CalComp presented sufficient evidence to go to the jury on the issue of IBM's monopoly power in a relevant market, both of its § 2 claims may be analyzed together. The only remaining elements necessary to establish the monopolization offense in this case would be monopolizing conduct and causal "antitrust" injury. If CalComp failed to show either of these, its attempt claim must necessarily also fail: first, because as discussed *supra,*[13] "conduct lawful for a monopolist must, a fortiori, be excluded as a basis for the attempt offense,"[14] and second, because the requirement of causal "antitrust" injury is common to both.

1. *Market Evidence*

Earlier it was noted that CalComp sought to define three relevant product markets: (a) a general purpose computer systems market; (b) an all disk drive and associated controller market; and (c) a plug-compatible disk drive and associated controller market (which excluded disk products for use with the CPU's of other manufacturers).[15] Several experts and industry executives testified, and a great deal of documentary evidence was admitted, in an effort to support each of these market definitions. Not only did the evidence concerning the various market definitions often conflict, but also the testimony and documents purportedly supporting a single market were sometimes internally inconsistent. Still, we assume *arguendo* that the third category is an appropriately defined product market. As noted earlier, it is the only market about which CalComp has standing to sue. *See* Part II *supra.*

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[13] *See* note 11 *supra.*

[14] 3 P. Areeda & D. Turner, Antitrust Law ¶ 828, at 321 (1978). As stated there, "[i]t would be perversely illogical to hold a defendant without [monopoly] power liable for conduct practiced with legal immunity by a monopolist."

[15] The data presented by both parties assume that the relevant geographic market is the United States.

The evidence of IBM's share of the product markets was similarly irresolute. For example, CalComp introduced the testimony of employees of IBM and other industry members concerning IBM's share of the loosely defined general purpose computer systems market; their estimates ranged from as low as 60% to as high as 80%, while IBM's proof was designed to show that none of these figures was even based on the particular market alleged. CalComp offered expert testimony that in 1970, 1971 and 1972, IBM's share of the all disk drive and associated controller market was 79.4%, 70.1% and 67.6% respectively, while IBM's evidence was that its share was under 30% during these years: CalComp's figures reflected cumulative shipments of disk products, while IBM's data was based on annual shipments. IBM contended that because its share of market was rapidly declining (from 100% when it invented disk products in 1960 to 25% in 1975), cumulative measures were misleading. In the plug-compatible market, IBM—again, because it invented these products—began with a 100% share; here too, CalComp's own evidence showed that IBM's share of market declined steadily.

While the district judge expressly made no finding on the adequacy of proof of share of a relevant market, he noted "in passing" that he was not inclined to direct a verdict solely on that ground. Because we conclude that there was no substantial evidence that any of IBM's alleged acts both constituted unreasonable conduct for a monopolist and produced causal "antitrust" injury to CalComp, we need not become enmeshed in the hundreds of pages of conflicting and complex evidence on this element of CalComp's claim. For purposes of this decision, we assume that IBM possessed monopoly power in the third purported market during the period 1963 to 1972.

We may therefore accept, with one important addition, CalComp's statement in its brief that the main issue of this appeal is "whether the *acts* and *practices* of IBM . . . constitute a violation of either the monopolization or attempt to monopolize clauses of Section 2 of the Sherman Act, or both." Should

we decide this question in the affirmative, the additional question we must answer would be whether any loss CalComp suffered actually resulted from the asserted § 2 violation (as opposed to lawful competitive practices).

2. *Evidence of § 2 Violations*

[25] CalComp argues that IBM directly injured it in three ways. Principally, CalComp contends that IBM engaged in "predatory" pricing by cutting its peripheral equipment prices in response to competition from CalComp and other manufacturers. CalComp also attempts to show that IBM made design changes on certain of its CPUs, disk drives and controllers of no technological advantage and solely for the purpose of frustrating competition from plug-compatible manufacturers. Finally, it urges that IBM raised CPU prices in an effort to offset revenue losses caused by its price reductions on peripheral equipment, and that these price increases constituted impermissible conduct for a monopolist.[16]

a. *Price cuts on peripherals*

[26] When IBM introduced its new System 370 Model 145 in September, 1970, it designated as the standard disk drive for use with this CPU a reworked version of earlier disk drives that had been replaced by competitive equipment and returned to IBM. The monthly rental for this three-drive disk product,

[16] CalComp also claims that prior to IBM's price cuts on disk products, it offset losses on CPUs with "monopolistic profits" from its then high-priced disk equipment. Even if we were to accept that CalComp's evidence was sufficient to go to a jury on the issue of whether such an antitrust violation occurred, a directed verdict would still be required because of the lack of any showing of causal injury. CalComp did not introduce substantial evidence (and indeed, would have had difficulty if it had attempted to do so) that it was "injured in [its] business or property by reason of" IBM's *high* prices on disk products. 15 U.S.C. § 15. *Cf. Greyhound Computer Corp. v. IBM Corp.*, 559 F.2d at 499 ("Greyhound can hardly complain of IBM's increase in its rental rates for main frame equipment, since this change could only work to the advantage of leasing companies").

the 2319A, was 30% below that for IBM's other four-, two-, and single-drive disk products on a per-drive basis—in part because the reuse of earlier disk drives permitted reduced development and manufacturing costs. The integrated control function in the Model 145-2319A system was also priced 60% lower than earlier stand-alone controllers, also due at least in part to cost-saving design changes. As opposed to the System 370 Models 155 and 165, which were "high-end" processors using the newly-designed 3300 high-speed disk product, the Model 145 was to be the lower-priced mainstay of System 370 for commercial applications. Viewing all of the relevant evidence in the light most favorable to CalComp, IBM's purpose in offering the lower-priced 2319A disk drive in conjunction with its Model 145 was twofold: primarily, to regain market share from peripheral equipment manufacturers who were flourishing under IBM's high price umbrella;[17] and secondarily, to reduce the overall price of the 145 system, thereby providing the lower-priced alternative to the higher-performance, higher priced models using the 3300 disk product that was to be the 145's market niche.[18] CalComp introduced no evidence that the

[17] CalComp quoted the chief financial officer of IBM's Data Processing Group as saying, "[w]e have strategically put ourselves into a weak position as a result of IBM's very high profit on disk products." CalComp's Chairman stated that IBM's loss of disk products business "was heading straight toward 100%, like in two or three years," and that IBM "had to react because they were losing so much business that no other choice was open to them. I wouldn't call that a punitive reaction. I'd call it a defense of market position." Another of CalComp's witnesses, a securities analyst who followed the computer industry in general and IBM in particular, testified that IBM "was facing very strong competition in the marketplace" from plug-compatible manufacturers, and that there was "an acceleration in terms of migration to non-IBM equipment." The same witness had earlier described IBM's disk price cuts in one of his reports as "dropping the traditional price umbrella for drive manufacturers." Still another CalComp witness, a former IBM employee, testified that if IBM had not responded to the "accelerating" competition for peripheral equipment sales, it would have lost "most or all" of this business.

[18] Other evidence indicated that by reducing the price of the system, the 2319A also helped IBM in competing with systems manufacturers such as RCA.

lower-priced 2319A was not "substantially profitable," as IBM asserted.[19]

Three months after the announcement of the 2319A, IBM introduced the 2319B disk drive for use with all System 360 models. Like the 2319A, this was also a "retread" manufactured from older IBM disk drives that had been replaced with other equipment and returned by customers. IBM similarly priced the three-drive 2319B more than 30% below its other disk drives on a per-drive basis. Also, it made no "additional use" charges (for use above a fixed number of hours per month) for the 2319B as it did with its other disk drives, in effect a further reduction in price *vis-a-vis* these other prod-

[19] IBM's evidence was that the profit on each of its disk products was greater than 20% of revenue before taxes, and that the 2319A in particular was expected to yield a profit of 33%.

In its *amicus* brief, Memorex Corp., another peripheral products manufacturer, contended that IBM's cost accounting system is too "inexact" to rely on for such determinations of profitability. Its argument is that by allocating the fixed cost burden for a particular product in part according to the product's revenues, "costs" are artificially reduced when a product's price is cut, and hence profitability is artificially increased. The evidence at trial, however, supports the single conclusion that IBM indeed fairly expected significant profits from its disk products even after price reductions. In response to IBM's price cuts, CalComp and other manufacturers reduced their prices again below IBM's, with the effect that, according to CalComp, they "received much smaller profit margins" as opposed to incurring losses. CalComp's own evidence established that prior to its price cuts, IBM's projected profits on its disk products ranged from 47% to 58%. In addition, IBM's evidence on profitability that Memorex challenges consisted of its internal calculations relied on at the time the decision to go forward with each product was made. As one of CalComp's experts testified, profit expectations at announcement or introduction of a product at a particular price are the primary consideration in analyzing a firm's pricing behavior. Finally, there is *absolutely* no evidence that IBM priced its disk products below marginal cost, which ordinarily is required to show predatory pricing as a means of obtaining or maintaining a monopoly in violation of § 2. *See Janich Brothers, Inc. v. American Distilling Co.*, 570 F.2d at 855-58, and text *infra*.

ucts.[20] The 2319B, viewing all of the evidence in the light most favorable to CalComp, was introduced for the express purpose of abating competitive inroads by other peripheral manufacturers.[21] CalComp introduced no evidence that the 2319B, like the 2319A, was not "substantially profitable.[22]

Following IBM's 2319B announcement, virtually all of the plug compatible manufacturers reduced their own prices below the 2319B.[23] As a further response to this competition,[24] IBM reduced its prices on peripheral products in still another way with the introduction of its Fixed Term Plan ("FTP") on May 27, 1971, described by CalComp as "the single most important act in the CalComp litigation and the principal basis for its

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[20] CalComp argues on appeal that IBM's failure to cut prices on existing disk products for use with System 360 CPUs to the level of the 2319B constituted "discrimination." Since the 2319B "retread" was available to all IBM System 360 users, however, this fact is of little consequence.

[21] *See* note 17 *supra*.

[22] *See* note 19 *supra*. IBM's evidence was that the 2319B was expected to return a profit before taxes equal to 32% of revenues.

[23] According to CalComp's Chairman, CalComp, like other plug-compatible manufacturers, generally had to offer discounts from the systems manufacturers' prices in order to convince users to take their copy instead of the original.

[24] CalComp introduced evidence of IBM studies reviewed by IBM management shortly before the announcement of FTP that included an analysis of the extent to which two of IBM's competitors, Telex and Memorex, could afford to increase manufacturing and sales volume and reduce prices on disk products. In particular, the studies concluded that Memorex would remain viable despite IBM's introduction of its 2319 disk drives, and that by 1976 IBM would lose 28.8% of the plug compatible disk market. IBM's financial group also reported, however, that if Memorex achieved 60% of the plug compatible disk market, such rapid growth in marketing overhead and working capital requirements would require substantial additional financing —particularly if Memorex met IBM price cuts in the area of 17%-22%.

The obvious concern in these reports to management was the increasing gains by peripheral manufacturers and the lengths to which price competition by Memorex in particular might be carried. Accepting CalComp's inferences from this evidence, FTP was a direct response to these competitor gains, and the level of FTP price cuts was determined by IBM's estimation of the extent of its competitors' willingness to lower prices still further.

damage claim." Prior to the introduction of FTP, IBM offered its products only for sale or 30-day lease, although virtually all of its competitors offered reduced prices for longer leases ranging from one to eight years. Under FTP, IBM customers were given the additional option of an 8% discount for signing a one-year lease and a 16% discount for a two-year lease on certain peripheral equipment, principally disk drives, tapes and printers. "Additional use" charges were also eliminated on FTP leases, consistent with the practice of most of IBM's competitors. Customers—but not IBM—could cancel the leases in return for a termination charge. Purchase prices on FTP products were also reduced by 15%. The evidence at trial was uncontroverted that FTP price reductions were expected to return a profit of 30% of revenue before taxes. Lease revenues would be reduced through 1972, but through 1975, FTP was expected to generate $165 million more profit than would have been the case without FTP lease options. This increased profitability due to FTP stemmed not only from an expected increase in market share, but also from longer average lease lives and reduced sales, reconditioning and reinstallation costs.

Finally, following its adoption of FTP, IBM introduced two other new products: the Integrated Storage Controller ("ISC") and the Integrated File Adaptor ("IFA"). ISC and IFA were options available for use with certain System 370 models, allowing direct attachment of disk products to the CPU. Customers choosing one of these "inboard" storage control units could save money by avoiding purchase or lease of a separate controller for some of their disk products, because the price of the ISC and IFA options were lower. Thus, ISC and IFA represented price cuts *vis-a-vis* IBM's "outboard" controllers.[25] However, there is little evidence in the record that

[25] CalComp's argument that ISC and IFA, by placing part of the control function "inboard," were designed solely to preclude plug-compatible manufacturers from part of the controller market is discussed under the heading "Design Changes" *infra*.

the ISC and IFA inboard storage control units were priced in response to competition. Rather, the evidence indicates that these products were less expensive to produce. CalComp's chairman, for example, testified that IFA enabled the CPU to perform functions "which had been performed in the stand-alone controller," at a "much cheaper" cost of design and manufacture. For purposes of analysis, however, we will assume that the IFA and ISC options, like the 2319A, 2319B and FTP products, were priced primarily in response to competition from the plug compatible manufacturers.

[27] The test of the reasonableness of the foregoing pricing actions, and the principal question facing us in this case, is whether IBM—which was the inventor and dominant supplier of the disk products in question—had the right to respond to the lower prices of its competitors with reduced, but still substantially profitable, prices on its own products. We conclude that it did.

[28] CalComp's principal damages claim is for lost revenues as a result of price reductions it made following IBM's 2319B and FTP announcements.[26] But since these price reductions admittedly resulted from competition by IBM—and since, as both CalComp's and IBM's evidence clearly demonstrates, IBM's stimulus to price competition was in turn competition from peripheral equipment manufacturers such as CalComp—it is impossible to say that CalComp's losses represent compensable "injury" from acts of IBM unnecessarily *excluding* or *restricting* competition. *See Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. at 488, 97 S.Ct. 690. Rather, IBM's price cuts were a part of the very competitive process the Sherman Act was designed to promote. To accept CalComp's position would be to hold that IBM could not compete if competition

[26] CalComp attributed its price reductions and consequent lost revenues solely to the 2319B and FTP price reductions. We need not discuss the resultant question of causation with respect to IBM's other price cuts in view of our result.

would result in injury to its competitors, an ill-advised reversal of the Supreme Court's pronouncement that the Sherman Act is meant to protect the competitive process, not competitors. *See id.*

[29, 30] In *Grinnell,* as noted *supra,* the Supreme Court excepted from monopolizing conduct those actions directed toward establishing growth by means of "a superior product, business acumen, or historic accident." 384 U.S. at 571, 86 S.Ct. at 1704. IBM's dominance in disk products, of course, was not due to historic accident. CalComp witnesses repeatly testified that IBM's position and success were due to its capable management, technological leadership, market orientation and superior products. Particularly relevant is the fact that IBM invented the disk products that CalComp and other manufacturers copied. As one of CalComp's witnesses, a former chairman of Scientific Data Systems, acknowledged, "IBM pioneered in the use of moveable head disk technology . . . ." More bluntly, according to CalComp's Chairman:

> [I]f they [IBM] weren't there and hadn't created the market and hadn't made installations, we wouldn't have any market at all. So it's hard to call the guy who's created your opportunity a competitor—although certainly IBM doesn't give up easily on any particular order.

Granted that IBM's technological innovations resulted in "growth as a consequence of a superior product," it was entitled to maintain its consequent dominant position in the market it created through "business acumen," which we take to include shrewdness in profitable price competition. The Sherman Act does not draw a distinction between competition on the bases of price and of performance: the two are inseparable parts of any competitive offering. Where the opportunity exists to increase or protect market share profitability by offering equivalent or superior performance at a lower price, even a virtual monopolist may do so. *Cf. United States Steel Corp. v. Fortner Enterprises, Inc.,* 429 U.S. 610, 612 n.1, 97 S.Ct. 861, n.1, 51

L.Ed.2d 80 (1977) (in attempt context, purposes of 'increasing sales' and 'increasing market share' are normal business goals, not forbidden by § 2" without more). As Judge Aldrich observed in *Dehydrating Process Co. v. A. O. Smith Corp.*, 292 F.2d 653, 657 (1st Cir. 1961), "the antitrust laws do not require a business to cut its own throat."

[31] The boundaries of reasonable price competition have recently been defined in this circuit. In *Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1359 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074, 97 S.Ct. 813, 50 L.Ed.2d 792 (1977), we affirmed a directed verdict for a defendant charged with attempted monopolization, holding that the plaintiff's failure to show that the defendant's prices were below its marginal or average varible costs[27] "was a failure as a matter of law to present a prima facie case under § 2." More recently in *Janich Brothers*, also an attempt case, we stated that " 'pricing at marginal cost is the competitive and socially optimal result' " of § 2 enforcement. 570 F.2d at 857, *quoting* Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 Harv.L.Rev. 697, 711 (1975). The analysis in *Hanson* and *Janich Brothers* is precisely apposite in the monopolization context. Indeed, the preceeding passage quoted in *Janich Brothers* dealt specifically with pricing by a monopolist. The thrust of this analysis is that price reductions up to the point of marginal cost are consistent with competition on the merits,

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[27] "Marginal cost" refers to the variable cost of the last unit of output, while "average variable cost," appropriately, refers to the average variable cost of all units. *See Janich Brothers*, 570 F.2d at 857 n.8, 858 n.11. *Hanson* determined that "because marginal cost is often impossible to ascertain" average variable cost was a sufficient judicial surrogate, 541 F.2d at 1358; *Janich Brothers* concurred that "[a]verage variable cost is likely to approximate marginal cost," 570 F.2d a7 858. Given the variation in cost accounting systems among business firms and the likelihood of the significant differences in capacity utilization from case to case, we expect that acceptance of this rule of thumb would first require careful scrutiny of the particular facts in a case where the defendant's prices are very near average variable cost. That is not the case here.

since in this case only less efficient firms will be disadvantaged, while a firm pricing below marginal cost by definition incurs losses, so that competition on the basis of efficiency in this situation is frustrated.

We recognize that refinement of the marginal or average varible cost test will be necessary as future cases arise. For instance, limit pricing by a monopolist might, on a record which presented the issue, be held an impermissible predatory practice. *See, e.g.,* P. Areeda & D. Turner, Antitrust Law ¶¶ 711-722 (1978); Williamson, Predatory Pricing: A Strategic and Welfare Analysis, 87 Yale L.J. 284 (1977); Areeda & Turner, Williamson on Predatory Pricing, 87 Yale L.J. 1337 (1978); Williamson, A Preliminary Response, 87 Yale L.J. 1353 (1978); Scherer, Predatory Pricing and the Sherman Act: A Comment, 89 Harv.L.Rev. 868 (1976); Areeda & Turner, Scherer on Predatory Pricing: A Reply, 89 Harv.L.Rev. 891 (1976); Scherer, Some Last Words on Predatory Pricing, 89 Harv.L.Rev. 901 (1976). And we do not foreclose the possibility that a monopolist who reduces prices to some point above marginal or average varible costs might still be held to have engaged in a predatory act because of other aspects of its conduct. On this record, however, IBM's pricing policies were not predatory.

The case before us presents an *a fortiori* situation as compared to *Hanson* and *Janich Brothers.* CalComp has not only failed to produce evidence of pricing below marginal or average variable cost, but it has also failed as well to introduce any evidence to controvert IBM's substantial proof that its price cuts were highly profitable. Moreover, the evidence of both parties established that IBM's disk price reductions were a response to lower-priced competition to which IBM was rapidly losing its disk business. Were § 2 interpreted not to exempt price cuts from attack under these circumstances, there could be no adequate guidelines for a jury to decide the issue of whether the prices at issue were "reasonable." The directed verdict as to CalComp's claims based on IBM's price competition was therefore proper.

b. *Design changes*

As noted above, when IBM introduced its System 370 Model 145 in September, 1970, it announced the 2319A as the standard disk product for use with the 145. The control function for the 2319A disk drive was integrated into the Model 145 CPU, and thus the interface between the disk drive and its control function was different from earlier models.[28] CalComp claimed that it was competitively disadavantaged as a result of these design changes, because it could not legally begin to copy the 2319A until IBM shipped the first of these disk drives, thereby disclosing the design requirements.

In February, 1971, IBM introduced its optional Integrated Storage Controller for use with its System 370 Models 158 and 168 which integrated the disk control function into the CPU. CalComp claimed it was injured by the introduction of ISC and the similar IFA, described above, because it was thereby precluded from replacing the control functions on CPU's with these options.[29]

CalComp characterized these design changes as "technological manipulation" which did not improve performance. It also complained of the fact that the newly integrated functions were priced below their non-integrated counterparts. But as we have stated, price and performance are inseparable parts of any competitive offering; and equivalent function at lower cost certainly represents a superior product from the buyer's point of view. The evidence at trial was uncontroverted that integration was a cost-saving step, consistent with industry trends, which enabled IBM effectively to reduce prices for equivalent functions. Moreover, there was substantial evidence

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[28] Unlike the 2319A, the 2319B—introduced for use with all System 360 models—attached to IBM's 2314 stand-alone controller.

[29] The System 370 Models 158 and 168 also featured substantial minimum memory integrated within the CPU. CalComp claimed that this redesign injured add-on memory manufacturers by making it impossible for them to compete for the integrated portion of these models' memories.

as well that in the case of Models 145, 158 and 168 the integration of control and memory functions also represented a performance improvement.

One of CalComp's witnesses stated: "I think in general the manufacturer will try and minimize his costs and where he integrates the control unit the assumption must be that he is achieving a lower cost solution."[30] Other of CalComp's evidence showed that among the reasons a separate control unit is more expensive than integrated control circuitry are that the former requires its own cabinet, frames, power supply, additional cabling and electronics. According to an IBM witness, the monolithic systems technology that preceded the 145—2319A system required a large standalone controller, whereas the new generation technology represented by the 145-2319A system produced a comparable control function "which was in the area of ten times smaller . . .. [Y]ou could now put that into the 145 system, utilizing its frames and its covers and then passing on the advantages of that to the customer in a price reduction." CalComp's Chairman stated that as a result of integration, the customer uses less floor space which "tends to be relatively expensive in a computer room."[31]

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[30] This same witness reported that the inclusion of a minimum memory capacity within the CPU was made possible by the reduction in memory size, "reflecting the product evolution from relatively large magnetic cores to high density semi-conductor packaging." He continued:

> As the basic cycle speed of the memory increases, it becomes important to minimize the distance between components. It may well be impractical to keep the new memories external to the processor . . ..

[31] In *Telex Corp. v. IBM Corp.*, 367 F. Supp. 258, 304 (N.D. Okl. 1973), *rev'd on other grounds*, 510 F.2d 894 (10th Cir. 1975), dealing with a different record developed from the same underlying facts, the district court found with respect to IFA and ISC that there had been a "preponderant showing that these integrations represented a legitimate technological and performance advance consistent with trends in the industry and at significant decreased cost." No appeal was taken from this ruling.

[32-34] IBM, assuming it was a monopolist, had the right to redesign its products to make them more attractive to buyers—whether by reason of lower manufacturing cost and price or improved performance. It was under no duty to help CalComp or other peripheral equipment manufacturers survive or expand. IBM need not have provided its rivals with disk products to examine and copy, *see* 3 P. Areeda & D. Turner, Antitrust Law ¶ 738, at 286 (1978), nor have constricted its product development so as to facilitate sales of rival products. The reasonableness of IBM's conduct in this regard did not present a jury issue.

c. *Increases in CPU prices*

In July, 1971, IBM announced price increases on certain of its CPUs of up 8%. The weighted average price increase of all CPUs was 1.5%. CalComp argued that these price increases, instituted two months after FTP was announced, were designed to offset the short-term revenue losses expected from FTP price cuts. After FTP users were "locked into" IBM peripherals for one or two year lease terms, according to CalComp, they would be unable to change CPUs, thus enabling IBM to raise CPU prices without appreciably affecting demand or profitability.

However, CalComp's own evidence indicated that the net effect of FTP and the CPU price increases was not expected to be a "wash" with respect to either CPU demand or overall profitability. CalComp introduced an IBM memo written after the CPU price increases went into effect stating that "the net effects of the Fixed Term Plan and [CPU] price change will probably be a wash insofar as *business volumes* are concerned." (Emphasis added). The author of this memo went on to explain that FTP would have the effect of increasing peripheral volume, while the CPU price increases would probably induce "adverse reaction on the part of some customers . . . ." In terms of overall business volume, the author concluded, "[a]ny decrease in system acceptances which occurs will probably be offset by . . . the Fixed Term Plan." In other

words, there was not a single demand function for CPUs and peripherals; IBM did not expect to raise CPU prices "with impunity," as CalComp asserts, by virtue of the effects of FTP.

Moreover, there was no evidence that CPU price increases actually offset the FTP price cuts. According to CalComp's amended complaint, "[p]eripheral devices . . . account for between 50% and 75% of the total value of a system configuration." The trial testimony of Richard Whitcomb, Director of Product Planning at Itel and a former IBM employee, and Edwin McCollister, Director of Market Development at Burroughs, confirmed this. Since, as discussed *supra,* the FTP price cuts amounted to 8% and 16%, a jury would be hard pressed to conclude from CalComp's evidence that the CPU price increases in fact offset FTP losses—i. e., that a weighted average price increase of 1.5% on CPUs made up for price cuts of 8% and 16% on peripheral products of equal or greater value.

Other evidence portrayed IBM's decision to raise CPU prices as motivated by inflation and cost concerns. IBM had not raised its mainframe prices in over four years; its 1971 increases were approved as cost-justified by the newly-formed Price Commission under the Economic Stabilization Program then in effect.

[35] Viewed in the light most favorable to CalComp, this evidence does not provide support for its "offset" theory. Especially since we have already determined that the FTP price cuts allegedly facilitated by the CPU price increases were themselves profitable and reasonable even for a monopolist in any event,[32] it was proper to take the case from the jury on this issue.

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[32] In its *Telex* decision, the Tenth Circuit held that IBM's conduct in this regard was not violative of § 2, focusing on the profitability of both the CPU and FTP prices rather than on IBM's possible motivation. Regardless of intent, the court implied, § 2 condemns only the monopolist's "use of monopoly power," and the facts in *Telex* showed that IBM's lowering peripheral prices and raising CPU prices was not a case of "an economic giant [dropping] prices to a level where it is not receiving an adequate return and . . . instead [relying] on its reserves or other activities to continue producing and marketing the particular product." *See* 510 F.2d at 925-26.

IV. *Conclusion*

In its *amicus* brief, the Department of Justice questioned that the district court could have directed a verdict in view of the complexity of the facts in this case. CalComp, too, contends that "this Court has [neither] the power [nor] obligation, to sift through the record to determine who should prevail" on appeal from the district court's directed verdict.

[36] The complexity of a plaintiff's case, however, does not entitle it to avoid a directed verdict if the evidence—no matter how much of it there may be—is weak. It is in fact the duty of both the trial and appellate courts to "sift through the record" to make this determination. Having closely analyzed each of CalComp's arguments and the evidence on both sides in support thereof, drawing all reasonable inferences in CalComp's favor, we conclude that the district judge was correct in taking the case from the jury.

[37] Nor does viewing the various acts of IBM collectively change our conclusion. The number of legal and evidentiary issues has required us to consider each instance of IBM's alleged monopolizing conduct separately for purposes of analytical clarity. However, we are mindful of the fact that "plaintiffs should be given the full benefit of their proof without tightly compartmentalizing the various factual components and wiping the slate clean after scrutiny of each." *Continental Ore Co. v. Union Carbide & Carbon Corp.*, 370 U.S. 690, 699, 82 S.Ct. 1404, 1410, 8 L.Ed.2d 777 (1962); *see Knutson v. Daily Review, Inc.*, 548 F.2d 795, 814 (9th Cir. 1976). But there can be no synergistic result such as CalComp claims from a number of acts none of which show causal antitrust injury to CalComp.

In *Continental Ore,* the Supreme Court held that the plaintiffs were entitled to introduce evidence "that there was a conspiracy and monopolization in existence when they came into the industry, *and that they were eliminated in furtherance thereof.*" 370 U.S. at 710, 82 S.Ct. at 1416 (emphasis added).

Such proof connecting the acts allegedly directed against systems manufacturers and leasing companies to the acts affecting CalComp was lacking in this case. Moreover, even assuming that IBM gained monopoly power in a relevant market by virtue of the former categories of acts, the latter acts constituted reasonable, pro-competitive conduct for a monopolist. CalComp suffered no "antitrust" injury from these, nor indeed any injury at all as that term is defined in § 4 of the Clayton Act. *See Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488, 97 S.Ct. 690, 50 L.Ed.2d 701 (1977).

Accordingly, the judgment of the district court entered on its directed verdict is

AFFIRMED.

Filed
Feb 5 1981
RICHARD H. DEANE
CLERK, U.S. COURT OF APPEALS

UNITED STATES COURT OF APPEALS

FOR THE NINTH CIRCUIT

MEMOREX CORPORATION, etc., et al.,
Plaintiffs-Appellants,
vs.
INTERNATIONAL BUSINESS MACHINES CORPORATION,
Defendant-Appellee.

No. 78-3050

ORDER

Before: DUNIWAY and GOODWIN, Circuit Judges, and KASHIWA, Judge, United States Court of Claims

The petition for a rehearing before this panel is denied.

The suggestion of a rehearing in banc and the brief of amicus curiae in support of the suggestion of a rehearing in banc have been transmitted by the Clerk to the members of the panel and to all judges of the court in regular active service. No member of the court in regular active service and no member of the panel that heard this case has requested a vote upon the suggestion of a rehearing in banc. The suggestion of a rehearing in banc is rejected.